NATIONAL PETROLEUM NEWS

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Successful Refrigeration Process Developed for Gasoline Plants

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, May 1.

A NEW lease of life may be given the compression method for manufacturing natural gasoline as a result of the experimental work on refrigeration conducted by the Roxana Petroleum Corp. under the direction of S. C. Carney. While the refrigeration may be applied successfully for cooling mineral seal oil at an absorption plant, its application to compression plants in connection with a stabilizer appears to be equally important.

Refrigeration has been attempted since the earliest days of the natural gasoline industry, but difficulties of operation have kept it from being entirely successful. Frank P. Peterson tried expanding compressed gas to aid in cooling as early as 1912. A little later mechanical expanders were tried. Ammonia refrigeration was the basis of experimental work as well.

Freezing up of equipment due to water content in the gas to be treated has been one of the factors which has limited the effectiveness of refrigeration in the past. This feature now presents no difficulty since silica gel can be utilized to absorb moisture out of the gas.

Probably the worst difficulty in the past has been the inability of manufacturers to hold the gasoline once it was condensed at low temperatures. Since the advent of the stabilizer, manufacturers are able to fractionate extremely wild products and produce finished goods which have a high recovery.

Mechanical expanders which were tried out proved to be difficult to operate because of lubrication troubles. Very few, if any, are now being used. Ammonia refrigerating plants have been expensive to operate. These plants were troubled with brine dilution, loss of refrigerant and freezing.

Carney Process

THE Carney process was developed for use in connection with a stabilizer of the De Brey type which is almost identical with the Thompson stabilizer except that it employs pressure whereas the Thompson equipment operates at atmospheric pressure. Patents on both types are owned by the Carbide & Carbon Chemicals Corporation. Experimental work was undertaken originally for the purpose of discovering a useful by-product from the stabilizer.

In brief, the Carney process consists of compressing a highly volatile, narrow cut from natural gas, condensing and cooling it under pressure, conducting the product to heat exchangers where it is vaporized for the purpose of robbing oil or gasoline and gas of their heat. The vaporized refrigerant is then returned to the compressor for recycling. It will be observed that the process does not employ the expansion principle but is a straight refrigeration process depending on the latent heat of vaporization for its operation.

The process has been developed at the Covington plant of the Roxana Petroleum Corp. on the famous Schroeder lease in the Garber field. Originally, Roxana had a small compression plant on the lease. When the deep sand was

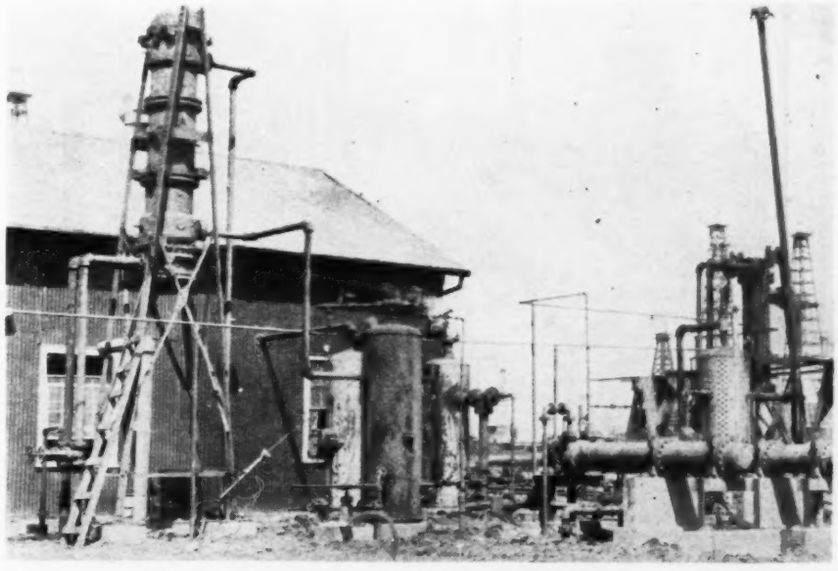


Fig. 1. Equipment for Refrigeration Process at Roxana Petroleum Corp. Gasoline Plant, Showing Refrigerant Condenser and Accumulator Tank at Left and Compression Plant Cooler at Right.

N. P. N. Staff Photo.

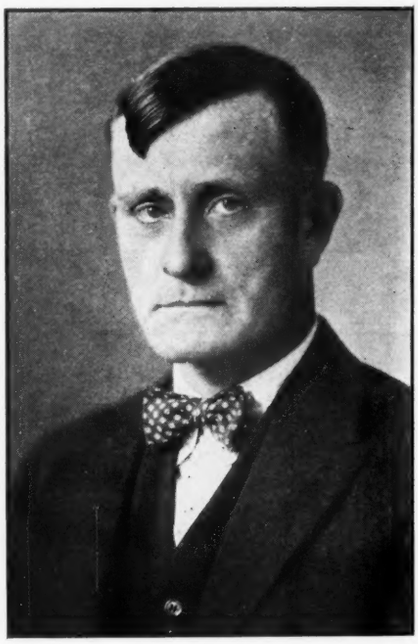
discovered last summer the company installed a number of portable absorption plants to supplement the existing installation. Since then it has installed a De Brey stabilizer in connection with the compression plant. The refrigeration process is being used at this one point both for cooling mineral seal oil and for cooling residue gas and gasoline from the compression plant before charging to the stabilizer.

Refrigerant Largely Propane

THE refrigerant itself is not a constant boiling material. It consists principally of propane but contains small portions of other fractions. It has an initial boiling point of 50 to 60 degrees below zero F. and an end point of 20 to 40 degrees above zero.

At the plant the writer placed a mercury thermometer graduated to 40 degrees below zero under a pet cock on the refrigerant storage tank. A little of the refrigerant released on the thermometer drove the mercury column entirely within the bulb and apparently froze the mercury.

The refrigerant is drawn from the top or upper plates of the stabilizer to a 160 h.p. Cooper compressor with 7 by 20 and 13 by 20 cylinders. When no make-up is being added to the system from the stabilizer there is a pressure of about 5 pounds at the suction. When make-up is being added this runs up to about 7 to 8 pounds per square inch. The discharge pressure runs from 160 to 180 pounds.



S. C. Carney, Roxana Petroleum Corp., who conducted successful work in refrigeration.

Refrigerant is conducted from the compressor to a condenser and thence to an accumulator tank. In the accompanying photograph, Fig. 1, the condenser is at the left of the picture elevated on a steel frame. A line will be seen leading from the condenser to the accumulator or stock tank which is setting in front of two small scrubber tanks. The refrigerant compressors are housed in the building in the background.

Compression Plant Application

EQUIPMENT for one application of refrigeration is seen at the extreme right of picture. A Braun heat exchanger. has been used as a refrigerating unit. Present practise at the plant is to pass the total residue gas of the compression plant through this cooler together with the gasoline produced by the high stage compressors.

The mixture of gas and gasoline in this cooler is kept under a pressure of 250 pounds per square inch. The high stage gasoline acts somewhat as an absorbent medium to pull out any light fractions remaining in the residue gas with the aid of the low temperatures created in the cooler by the evaporation of refrigerant.

Silica gel units had not been installed at the time the writer visited the plant last week and as a result the residue gas and high stage gasoline was being cooled only down to around 50 degrees F., a drop of 20 degrees. This was to avoid freezing of moisture in the gas. When the dehydrating agent has been installed it is planned to reduce the temperature very greatly.

The high stage gasoline, together with the added light fractions picked up in the cooler, is separated from the residue gas after leaving the cooler and is then conducted directly to the stabilizer. The stabilizer is producing from the mixture a normal stabilized gasoline in addition to the refrigerant mentioned above which has an initial boiling point of 50 to 60 degrees below zero.

Oil Cooling Application

IN cooling the product of the compression plant a very different plan is being followed from that employed in cooling mineral seal oil from the portable absorption plants. The oil cooler shown in Fig. 2 is a therma-siphon in which the refrigerant is circulated in a constantly agitated stream.

The cooler consists of a central tank for the refrigerant in which a liquid level is continuously maintained. Two small Braun tubular coolers are connected with the reservoir at three points. At the lower end the coolers are connected together with a six-inch line which is connected by a second six-inch T line to the lower part of the reservoir. At the upper end each cooler is connected with the reservoir by a six-inch nozzle.

The liquid level control is such that the two upper lines connecting with the reservoir are always about half filled

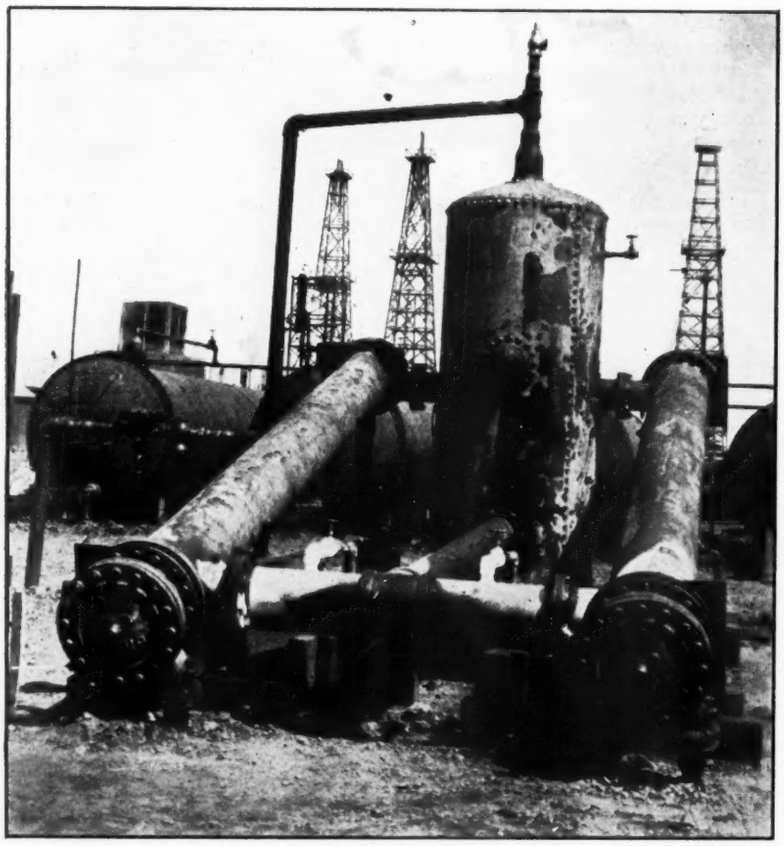


Fig. 2, Mineral Seal Oil Cooler at Roxana Plant Utilizing Petroleum Refrigerant.

N. P. N. Staff Photo.

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E. L. Peck

President during the past year of the Association of Natural Gasoline Manufacturers. He was elected president in April, 1925, succeeding D. E. Buchanan. Mr. Peck is general manager of the Empire Gasoline Co., Bartlesville, Okla.

and the tubes in the cooler are completely covered with the liquid refrigerant.

Since the reservoir is connected through the T with the lower end of the oil coolers and at the upper end as well, the refrigerant is free to move in any direction through the system. A constant temperature is maintained in all parts of the cooler because of the ability of the refrigerant to move through the system. It is impossible to have wide differences in temperature in different parts of a body of liquid free to circulate.

Although the principle on which the cooler operates is partly thermo-siphonic the chief cause of circulation is the boiling of the refrigerant where it comes in contact with the oil filled tubes in the Braun coolers. The column of liquid in the coolers is lighter, due to the bubbles of vapor hence there is a difference in hydrostatic heads between the two columns.

Refrigerant comes to the cooler from the make tank shown in Fig. 1, under a pressure of 160 pounds per square inch and is released to a pressure of 20 pounds through a half-inch Fisher balance valve as it enters the oil cooler. The refrigerant may be injected direct into the reservoir or through the valves connected with the six-inch line between the two coolers. These are shown covered with frost in Fig. 2.

Mineral seal oil makes two passes through the tubes in the coolers. In one direction it passes through 9 tubes and in the other more slowly through 96 tubes. Mr. Carney has one cooler in which the oil is making the big pass upwards and the small pass downwards while the other is operating on the opposite plan. Tests will be made to see which is more satisfactory.

The 20-pound back pressure on the refrigerant in the cooler is maintained by a regulator in the line which carries the vapors back to the compressor. The amount of pressure on the cooler regulates the temperature. A lower pressure would allow a more rapid vaporization of the refrigerant and would cause a lower temperature.

With a pressure of 20 pounds per square inch, the refrigerant is maintained at a temperature of about 30 to 35 degrees F. which is about 30 to 35 degrees lower than the temperature of the mineral seal oil leaving the cooler. Refrigerant is being added constantly while vapors are being removed from the cooler.

Temperature Control

THE cooler is operated on the theory that efficient withdrawal of heat from the oil cannot be accomplished unless the tubes are bathed in liquid. It is for that reason that a liquid level is maintained so that it will cover the tubes. The maintenance of a quantity of liquid circulating in the system enables Mr. Carney to control his temperatures as desired. If the refrigerant were permitted to vaporize completely on entering the system, temperature control could not be kept constant throughout the system.

In the gas cooler it is planned to run to very low temperatures and the counter current principle of cooling will be employed.

It is considered probable that 80 horse power engines will provide a temperature drop of 30 degrees on an oil circulation of 250 gallons per minute. Cooling water requirements for condensation are approximately an equal quantity of water with half the temperature rise.

The present oil cooler used at the Roxana plant is cooling 70 to 100 gallons of mineral seal oil per minute through a temperature drop of 25 degrees F. Mr. Carney has used only available material on the lease in constructing his system. He plans to design equipment for a permanent plant on a scale which will do the work more efficiently.

Gasoline from the portable absorption plants is not being run to the sta-

IN the accompanying article by Mr. Chatfield, staff writer, National Petroleum News is again first in news leadership in putting before the natural gasoline industry a development in refrigeration work which may prove of great importance to the industry in the future.

Other exclusive articles on natural gasoline in this issue, including the development of portable plants, use of bubble towers, present status of the industry in California, detailed statistics of production and plant operations since 1911, are to be found starting on page 59.

bilizer at present. For that reason the oil cooler is not adjusted to carry the temperature of the mineral seal oil very low. If the stabilizer was to be used it would be good policy to carry the oil temperature down to a low figure.

Possibilities of Process

IN a recent paper read before the Society of Refrigeration Engineers a prominent technologist of that industry stated that propane has an efficiency of 85 per cent as a refrigerant. He gave the efficiency of ammonia as being 84.5 per cent. If the Carney process has a general application in the petroleum industry there is a possibility later that the refrigerant may have other industrial applications.

It is obvious that if mineral seal oil can be cooled to low temperatures economically during hot summer months in this territory that natural gasoline production can be kept up to spring and winter levels. The average wet bulb temperature in this area in the summer is about 68 degrees F. Most oil absorption plants are not able to cool their oil down to within 10 degrees of that figure.

With the refrigeration process it will be possible to carry the absorption oil down to temperatures as low as found to be economical. The cold test of the mineral seal oil must be such as not to interfere with the desired cooling.

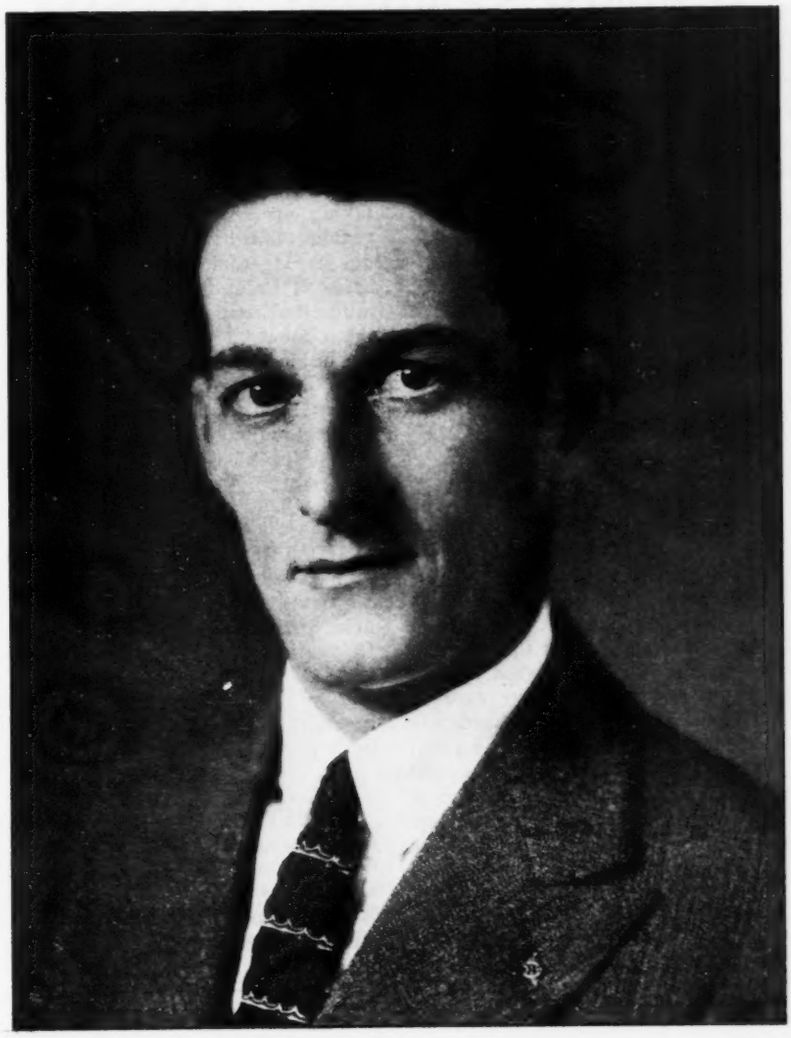
Adapt Present Equipment

IT is possible to use existing equipment in almost any absorption plant to work up a refrigerating plant. Details of equipment are not important, the principles only need be observed. At the Roxana plant Mr. Carney has used only odds and ends of equipment on hand to build his plant.

During the past year the portable gasoline plant has been growing in popularity in the Mid-Continent field because of the fact that plant capacity can be regulated with the supply of gas to be processed. The compression process lends itself readily to plant expansion and contraction in line with the gas supply. Any number of compressors and cooling units may be added or moved away without disturbing plant balance.

This is not the case with the ordinary absorption plant which must have absorber and still capacity to handle the gas supply. Except in portables, the absorber and still equipment is not divided into small units so that even if some compressors are moved from an absorption plant there is still a large waste investment in idle equipment.

If refrigeration added to a compression plant proves completely successful in getting maximum yields it appears likely that the method may become popular again. The compression method was the first to be employed but began to be abandoned about five years ago. Hundreds of plants were changed over to the absorption process in 1921 and 1922. In the past five years only a handful of compression plants have been built.



—Photo by J. L. Rivkin

A. M. Ballard

Manager of the Gasoline Department of the Twin State Oil Co., Tulsa, one of the three vice presidents of the Association of Natural Gasoline Manufacturers the past year.

Percentage of Natural Gasoline Production to Total Gasoline Output at Refineries By Years

	Natural-Gas Gasoline	Refinery Gasoline	%
1911	7,425,839		
1912	12,081,179		
1913	24,060,817	No statistics on refinery gasoline prior to 1917.	
1914	42,652,632		
1915	65,364,665		
1916	103,492,689		
1917	217,884,104	2,850,546,423	7.64%
1918	282,535,550	3,570,312,963	7.91%
1919	351,535,026	3,957,857,097	8.88%
1920	384,311,817	4,882,546,699	7.87%
1921	449,934,402	5,153,549,318	8.73%
1922	505,832,000	6,202,234,613	8.15%
1923	816,226,000	7,555,945,143	10.80%
1924	894,000,000	8,959,680,220	9.96%
1925	1,104,900,000	10,849,127,707	10.18%

New Field Opened in Colombia on Leonard Company Property

CLEVELAND, O., May 1

ON the extensive Sogomoso concession of the Leonard Oil Development Co., adjoining on the north the huge property of the Tropical Oil Co., the discovery well has been drilled of what the owners believe will prove to be a pool of large proportions.

Half interest in this property was acquired some time ago by the Gulf Oil Corp., Gulf to undertake development. Leonard had already started one well and this is the one which has but lately come in.

Estimates of an interested official are that the well is good for 3000 barrels daily which would make it one of the best ever drilled in the republic. Depth to principal pay sand was about 900 feet. A sand 40 feet thick was encountered at 165 foot depth and this carried considerable oil but without sufficient pressure to flow.

The well was shut down upon reaching the sand at 900 feet so that preparations could be made to take care of the oil. While the crew was absent the well drilled itself in and in some manner the oil caught on fire, flowing and burning for about 72 hours before it could be extinguished. The steel derrick and considerable material were ruined. This will delay final completion for a time, as it is considerable of a task to replace materials in this isolated region.

A remarkable thing about the well was that it flowed through a string of 12½-inch casing. Its gas pressure is great.

This is one of the several concessions held by the Leonard company in Colombia. It is located in the valley of the Magdalena River, the transportation route to the Tropical properties immediately south. The Sogomoso property (so named from the river which runs through the region) is characterized by large seepages, one of which will make several barrels of oil daily.

Geological opinion favors the existence of several oil bearing sands below the one which was reached by the drill.

The first trunk pipe line in Colombia is now at completion stage. This is the 10-inch 350-mile line of the Andian National Corp., Ltd., whose headquarters are in Toronto. This line was laid to serve the fields of the Tropical Oil Co., whose development covers a large area and at present comprises a potential daily production of around 75,000 barrels.

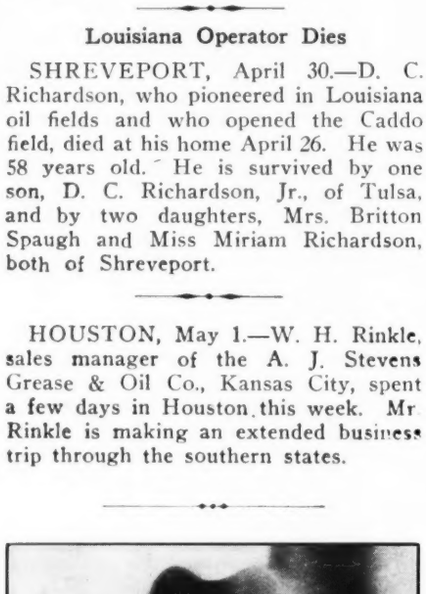
Peculiarly enough, this new strike is on concession obtained by the same man, John W. Leonard, who supervised the initial development of the Tropical property. Associated at that time with Benedum, Trees and others in the formation of the Tropical, Mr. Leonard spent considerable time in Colombia on the De Mares concession. The value of this concession established, Tropical Oil was sold to International Petroleum, whereupon Mr. Leonard, who had plenty of faith in other parts of Colombia, began taking up other properties. There was nothing half-hearted about the way he did it. He took up about three million acres in Colombia and about twice that much in Ecuador. All of this went into the Leonard Oil Development Co.

The operating company, South American Gulf Oil Co., is shipping in several rotary outfits and further development of the Sogomoso property is in immediate prospect.

Louisiana Operator Dies

SHREVEPORT, April 30.—D. C. Richardson, who pioneered in Louisiana oil fields and who opened the Caddo field, died at his home April 26. He was 58 years old. He is survived by one son, D. C. Richardson, Jr., of Tulsa, and by two daughters, Mrs. Britton Spaugh and Miss Miriam Richardson, both of Shreveport.

HOUSTON, May 1.—W. H. Rinkle, sales manager of the A. J. Stevens Grease & Oil Co., Kansas City, spent a few days in Houston this week. Mr Rinkle is making an extended business trip through the southern states.



F. L. Chase

Operating Manager, Lone Star Gas Co., Dallas, Tex., who has served as one of the three vice presidents of the Association of Natural Gasoline Manufacturers the past year.

No Place on Congress Calendar for Oil

WASHINGTON, May 3.—All thought of President Coolidge saying anything to Congress at this session about oil conservation problems seems to have been abandoned. At one time it was thought that the Federal Oil Conservation Board would make a report in time to transmit some message to Congress on this subject.

This conclusion is based upon three facts. The first is that administration leaders in Congress have made up a program for action by Congress before the adjournment which leaves no place for anything pertaining to subjects other than those long under discussion, as for instance farm relief legislation. The second is that the Congress leaders hope to get away from Washington next month. They hoped to adjourn the session in May but that seems impossible. But to adjourn in June means working at high pressure for the six or seven weeks now

The third and last fact is that Charles E. Hughes, as the representative of the Institute, is expected to appear before the Board, either in person or by brief, probably both, near the end of May, and it is not thought President Coolidge would carry any suggestions to Congress before Mr. Hughes has his innings. About the only thing Congress could do on the subject would be to give the Board an appropriation, if its initial appropriation of $50,000 is about exhausted.

There is much interest and some speculation as to how Mr. Hughes will handle his subject in view of the fact that he has been denied the material the Board has collected. Controversy has been aroused over the ethics of this move and that of Dr. George Otis Smith, director of the Geological Survey and member of the board's advisory subcommittee, in asking geologists of the country to anonymously criticize the Committee of Eleven report of the American Petroleum Institute.

If any of the material that Dr. Smith may gather in that way finds its way before the board, its appearance will probably provoke more controversy. One government body, the Interstate Commerce Commission, is doing all it can to prevent what is known in law practice as shooting from ambush. The railroad regulating body, when it enters upon an inquiry, expects everybody concerned to lay all the facts in his possession on the table. When it gathers material on its own initiative it furnishes all parties of record in that matter with copies of the material it has gathered, so that, when the final arguments are made, everybody will know what everybody has said at all stages of the proceedings.

CLINTONVILLE, WIS.—The Four Wheel Drive Auto Co. recently put on a 3½ to 5 ton truck for use in various branches of its business.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended April 30 (By Telegraph)

	Kansas	%Change Previous Week	Oklahoma	%Change Previous Week	No. & Cent. Texas	%Change Previous Week	No. La.-Ark.	%Change Previous Week	Totals April 30	%Change Previous Week	Totals Week Ended Apr. 2
Plants Reporting	23		46		41		14		124		124
Daily Cap. (Bbls.)	98,200		165,900		144,300		51,700		460,100		460,100
Da. Av. Crude Runs	53,558	+ 9.4	104,895	+ 4.2	67,954	+ 3.5	46,277	— 2.4	272,684	+ 3.8	238,914
Da. Av. Other Oils	6,680	+32.4	2,506	.....	4,006	+16.5	253	—72.8	13,445	+96.9	7,109
GASOLINE—Gallons											
Stocks April 23	13,525,785		49,806,815		18,691,693		7,164,108		89,188,401		95,029,234
Prod. 4-23 to 4-30	8,692,870	+11.3	14,477,117	+ 8.6	7,437,633	+ 3.5	3,294,836	+ 0.7	33,902,456	+ 7.3	29,198,630
Ship. 4-23 to 4-30	9,990,338	+21.6	17,350,765	+21.5	7,521,969	+24.1	3,292,968	+10.0	38,156,040	+21.0	32,761,357
Stocks April 30	12,228,317	— 9.6	46,933,167	— 5.8	18,607,357	— 0.5	7,165,976	+0.03	84,934,817	— 4.8	91,466,507
Ratio Sales to Prod	114.9%		119.8%		101.1%		99.9%		112.5%		112.2%
KEROSENE—Gallons											
Stocks April 23	1,473,915		2,704,215		1,122,320		343,464		5,643,914		8,941,936
Prod. 4-23 to 4-30	1,344,638	+ 6.2	3,111,654	+17.6	1,136,771	+ 2.4	486,821	— 5.6	6,079,884	+ 9.8	5,010,282
Ship. 4-23 to 4-30	1,356,070	+10.4	3,001,349	—12.1	1,043,512	—10.8	428,691	—10.6	5,829,622	— 7.3	5,766,962
Stocks April 30	1,462,483	— 0.8	2,814,520	+ 4.1	1,215,579	+ 8.3	401,594	+16.9	5,894,176	+ 4.4	8,185,256
Ratio Sales to Prod	100.8%		96.5%		91.8%		88.1%		95.9%		115.1%
STOVE DISTILLATE—Gallons											
Stocks April 23	341,880		1,660,659		186,969		27,258		2,216,766		2,839,091
Prod. 4-23 to 4-30	560,698	+32.4	560,794	—14.2	383,820	+11.4	21,714	+ 3.2	1,527,016	+ 5.8	1,535,601
Ship. 4-23 to 4-30	388,023	+11.2	438,025	—35.8	336,444	+22.1	20,790	+24.4	1,183,282	—10.6	1,741,718
Stocks April 30	514,545	+50.5	1,783,428	+ 7.4	234,345	+25.3	28,182	+ 3.4	2,560,500	+15.5	2,632,974
Ratio Sales to Prod	69.2%		78.1%		87.7%		95.7%		77.5%		113.4%
GAS OIL—Gallons											
Stocks April 23	7,294,811		34,827,003		6,096,749		6,869,016		55,087,579		51,248,513
Prod. 4-23 to 4-30	1,527,882	+ 3.8	1,657,552	+64.6	523,761	+207.6	2,169,369	—18.9	5,878,564	+10.5	4,904,509
Ship. 4-23 to 4-30	1,260,867	+99.8	1,427,970	— 8.2	295,986	— 4.4	2,347,101	+19.3	5,331,924	+19.4	3,431,892
Stocks April 30	7,561,826	+ 3.7	35,056,585	+ 0.7	6,324,524	+ 3.7	6,691,284	— 2.6	55,634,219	+ 1.0	52,721,130
Ratio Sales to Prod	82.%		86.1%		56.5%		108.2%		90.7%		70.0%
FUEL OIL—Gallons											
Stocks April 23	5,069,008		35,490,763		18,838,867		4,479,634		63,878,272		67,047,680
Prod. 4-23 to 4-30	4,749,693	+ 5.7	9,542,659	+15.5	9,157,132	+ 3.2	7,697,730	+ 5.1	31,147,214	+ 7.6	26,724,460
Ship. 4-23 to 4-30	4,329,494	— 3.9	8,718,464	— 0.7	8,537,393	+ 8.2	7,232,212	+ 1.6	28,817,563	+ 1.9	28,339,237
Stocks April 30	5,489,207	+ 8.3	36,314,958	+ 2.3	19,458,606	+ 3.3	4,945,152	+10.4	66,207,923	+ 3.6	65,432,903
Ratio Sales to Prod	91.2%		91.4%		93.2%		94.0%		92.5%		106.0%

Gasoline Shipments Are Near Last Year's Record

By Telegraph

TULSA, May 4

GASOLINE stocks at 124 Mid-Continent refineries with a still capacity of 460,100 barrels per day were reduced more than 4,000,000 gallons during the last week of April, according to reports gathered by National Petroleum News. Stocks at the reporting plants on April 30 totaled 84,934,817 gallons. Reduction in stocks was due to a remarkable increase in domestic demand. Shipments for the week totaled 38,156,040 gallons, compared with 31,545,671 gallons the previous week.

Shipments lacked only a little more than 1,000,000 gallons of equaling the peak shipments in June last year by substantially the same group of plants.

With the exception of Louisiana-Arkansas all groups participated in the stock reduction. The increase in stocks at Louisiana-Arkansas plants was only 2000 gallons. Production of gasoline increased 2,300,000 gallons when refiners increased their scale of operations. Crude charges were increased 10,000 barrels per day to an average of 272,684 barrels per day.

Stocks of all other principal commodities increased during the week. Kerosene stocks increased 200,000 gallons; stove distillate 300,000 gallons; gas oil 500,000 gallons, and fuel oil 2,400,000 gallons.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Apr. 30. Change in stocks figured from Apr. 2.

Gasoline

	Gallons
Production	124,980,148
Shipments	131,511,838
Net change in stocks	—6,531,690
Ratio sales to production	105.2%

Kerosene

	Gallons
Production	20,990,395
Shipments	23,281,475
Net change in stocks	—2,291,080
Ratio sales to production	110.9%

Stove Distillate

	Gallons
Production	6,333,132
Shipments	6,405,606
Net change in stocks	—72,474
Ratio sales to production	101.1%

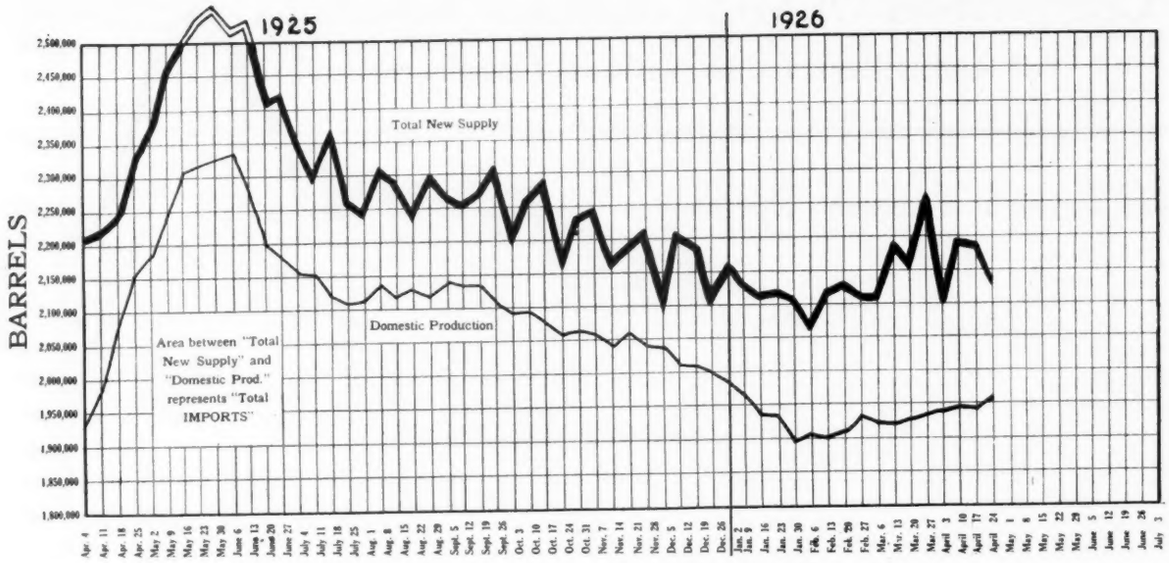
Gas Oil

	Gallons
Production	22,225,287
Shipments	19,312,198
Net change in stocks	+2,913,089
Ratio sales to production	86.9%

Fuel Oil

	Gallons
Production	112,761,396
Shipments	111,986,376
Net change in stocks	+775,020
Ratio sales to production	99.3%

Daily Average Crude Oil Production and Imports



This chart is based on official complete figures of A. P. I. and is a week older than production estimates given in tabular form.

Daily average gross crude output of United States, by fields, for week ending with dates given below, as compiled by American Petroleum Institute

OKLAHOMA

	May 1	April 24
North Braman	2,300	2,350
South Braman	11,350	10,350
Blackwell	4,200	3,950
Hubbard	1,900	1,850
Thomas	5,050	5,300
Tonkawa	37,050	37,200
Garber	34,150	34,600
Burbank	41,050	41,200
Osage, outside Burbank	33,250	32,950
Watchorn	2,450	2,450
Cushing	21,850	21,900
Yale Jennings	17,850	16,650
Davenport	15,200	15,600
Bristow-Slick	29,900	29,950
North Okmulgee	17,800	17,800
Lyons-Deaner	4,300	4,250
Stroud	2,350	2,400
Cromwell	18,050	18,200
Papoose	12,100	12,350
Wewoka	34,900	34,900
Duncan district	7,250	7,250
Graham	9,500	9,600
Fox	4,200	4,200
Healdton	14,900	14,900
Hewitt	12,200	12,200
Others	68,000	67,800
Total Oklahoma	463,100	462,150
Increase		950

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KANSAS

	May 1	April 24
Florence-Covert	1,700	1,700
Peabody-Elbing	4,350	4,300
Eldorado-Towanda	13,900	13,850
Augusta-Fox-Bush	3,700	3,750
Rainbow Bend	4,700	4,800
Russell	5,550	5,350
Greenwood county	44,000	42,400
Others	27,250	26,650
Total Kansas	105,150	102,800
Increase		2,350

NORTH LOUISIANA

Homer	5,800	5,750
Haynesville	10,300	10,250
Caddo, light	8,650	8,700
Caddo, heavy	2,150	2,300
De Soto, Red River	3,950	3,900
Elm Grove	550	600
Bellevue	2,500	2,600
Cotton alley	8,600	8,550
Urania	11,950	8,850
Total North Louisiana	54,450	51,500
Increase		2,950

ARKANSAS

	May 1	April 24
El Dorado	7,450	7,400
Smackover, light	17,650	17,550
Smackover, heavy	132,750	133,400
Stephens	1,850	1,550
Nevada	3,000	3,000
Lisbon	10,500	7,800
Total Arkansas	173,200	170,700
Increase		2,500

NORTH TEXAS

Burkburnett	12,350	12,350
Electra	16,250	16,250
Iowa Park and K-M-A	4,500	4,450
Wilbarger	12,700	12,850
Panhandle	16,500	8,700
Petrolia	500	500
Archer County	31,700	31,600
Others	2,000	2,000
Total North Texas	96,500	88,700
Increase		7,800

EAST CENTRAL TEXAS

Mexia	13,100	13,300
Currie	1,100	1,100
Richland	1,700	1,700
Corsicana-Powell	30,200	30,300
Wortham	9,250	9,350
Total East Central Texas	55,350	55,750
Decrease		400

WEST CENTRAL TEXAS

Stephens County	13,300	13,350
Eastland County	6,000	5,950
Desdemona	2,650	2,650
Young County	7,650	7,650
Palo Pinto County	500	500
Callahan County	3,350	3,400
Shackelford County	5,700	2,750
Reagan County	32,200	33,800
Others	10,000	9,500
Total West Central Texas	81,350	79,550
Increase		1,800

SOUTHWEST TEXAS

Luling	22,950	22,950
Mirando	6,800	6,600
Somerset	2,150	2,150
Lytton Springs	6,350	7,200
Piedras Pintas	200	250
Others	600	600
Total Southwest Texas	39,050	39,570
Decrease		520

GULF COAST

Goose Creek	8,750	8,950
Hull	22,200	18,050
Saratoga	1,100	1,150
Blue Ridge	700	450
Damon Mound	950	900
Batson	1,150	1,150
West Columbia	9,250	8,700
Humble	3,800	3,750
Pierce Junction	1,250	1,300
Sour Lake	4,050	4,050
Spindletop	3,650	3,850
Orange County	10,750	11,400
Edgerly	1,100	1,100
Evangeline	1,050	1,100
Vinton	6,450	6,250
Lockport	5,500	4,150
South Liberty	5,350	5,900
Big Creek	1,000	1,150
Boling	8,400	8,800
Others	1,300	1,350
Total Gulf Coast	97,750	93,500
Increase		4,250

ROCKY MOUNTAIN
WYOMING

	May 1	April 24
Salt Creek	56,850	52,550
Grass Creek	3,000	2,900
Elk Basin	550	600
Big Muddy	3,500	3,500
Lost Soldier	4,350	4,250
Rock River	3,200	3,100
Teapot Dome	1,450	1,150
Others	4,650	4,550
Total Wyoming	77,550	72,600
Increase		4,950

MONTANA

Cat Creek	2,950	2,950
Sunburst	24,000	18,500
Total Montana	26,950	21,450
Increase		5,500

COLORADO

Moffat (Craig)	3,250	2,800
Fort Collins	2,750	2,900
Florence	350	400
Others	450	500
Total Colorado	6,800	6,600
Increase		200

NEW MEXICO

Artesia	3,000	3,000
Hogback	450	450
Rattlesnake	450	450
Total New Mexico	3,900	3,900
Total Rocky Mountain	115,200	104,550
Increase		10,650

CALIFORNIA

Santa Fe Springs	50,000	49,000
Long Beach	104,000	105,000
Huntington Beach	46,000	45,500
Torrance	26,500	27,500
Dominguez	21,000	21,000
Rosecrans	18,000	18,500
Inglewood	53,000	53,000
Midway-Sunset	92,500	93,000
Others	194,000	192,000
Total California	605,000	604,500
Increase		500

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va, Pa, and N. Y.)	104,000	102,500
Increase		1,500

PRODUCTION SUMMARY

Production east of Rockies	1,385,100	1,351,450
Increase east of Rockies		33,650
Total Production in U. S.	1,990,100	1,955,950
Increase in U. S.		34,150

Crude Price Changes

OIL CITY, May 3.—On April 27 Joseph Seep Purchasing Agency advanced Gaines district crude 15 cents per barrel, to $3.10 per barrel.

* * *

HOUSTON, May 3.—Humble Oil & Refining Co. on April 28 re-classified Gulf Coastal "B" grade crude and advanced those grades 15 cents. Five new grades were added to the schedule, with the minimum gravity remaining below 25 degrees which was advanced to $1.40, and top grade was made 35 and above, posted at $1.95. Top grade formerly was 30 degrees and above. Five cents is added to each full degree over 25 degrees gravity. "A" grades remain unchanged at $1.50.

Humble's advance and re-grading were effective in Goose Creek, Hull, Liberty, West Columbia, Orange, Boling and Pierce Junction fields.

The Texas Co. met the advance on April 28 on "B" grades, which it designates as "all Gulf Coast heavy crudes which do not meet tests for grade 'A' or for Gulf Coast light oils." Other grades "B" remain $1.25.

Correction

In the April 19 column in the refinery market table of the April 21 and April 28 issues of National Petroleum News, and also in the April 26 column of the April 28 issue, North Texas grades B and BB natural gasoline were shown erroneously as 8 to 8¼ cents. The price on that date should have been 8¼ cents flat. Prices are corrected in the April 19 column in the refinery table of this issue.

Chamber's Oil Discussion Needs A Leader

WASHINGTON, May 4.—The Chamber of Commerce of the United States will have a discussion of oil problems at its forthcoming fourteenth annual meeting, May 11-14, if its program committee can find some one willing to express views to start such a discussion as a part of the program devoted to natural resources when the program was issued in outline form the space reserved for the speaker on oil was left blank. The men who had been asked to speak had conflicting engagements.

The chamber assumes no responsibility for views that may be put forth. It takes no position on controversial matters except and unless a referendum has been had on the subject. Therefore, whatever may be said about oil, as part of the program of the annual meeting, will be merely the views of the speaker expressing them.

Natural resources will be discussed as follows: Hydro-electric power by John B. Miller, president of the Southern California Edison Co.: coal, by Walter Barnum, president of the Pacific Coast Co.; and lumber by Everitt G. Griggs, president of the St. Paul and Tacoma Lumber Co., the three speakers being Pacific coast men.

Shipments from Los Angeles Week Ended May 1

(Barrels of 42 Gallons)

	Crude	Gasoline	Gas Oil	Fuel Oil	Tops	Kerosene	All Products
Atlantic Domestic	82,357	93,000	.....	110,000	.....	.....	285,357
Atlantic Foreign	115,000	69,000	.....	.....	.....	.....	184,000
Pacific Domestic	728,496	122,261	.....	203,816	.....	.....	1,054,573
Pacific Foreign	.....	.....	.....	131,616	.....	.....	131,616
Total Shipments Week Ended May 1							1,655,546
Total Shipments Week Ended April 24							2,332,429
Total Shipments Week Ended April 17							2,215,630

Ships Clearing for the Atlantic Coast

Byron D. Benson to Bayonne with 82,357 barrels crude for Tide Water Oil Co.

F. Q. Storey to Bayonne with 110,000 barrels fuel oil for Standard Oil Co. of New Jersey.

Empire Arrow to Bayonne with 93,000 barrels gasoline for Standard Transportation Co.

C. F. Farren, Oil Producer, Dies in Tulsa

Charles F. Farren

TULSA, May 3.—Charles F. Farren, pioneer Independent oil producer, died here May 1 following an emergency operation. His death came at St. John's hospital, the institution which by his own ardent work, he helped make possible for the city of Tulsa. He had been a leader here for the past 14 years. On the afternoon of April 30, Mr. Farren was stricken without warning by an internal trouble. He failed rapidly after the operation and died at one o'clock Saturday afternoon.

In spite of his active life as an oil producer, Mr. Farren found time to take a leading part in every civic enterprise of Tulsa. Nearly every charitable organization in the city carried his name on its list of officers. As vice-president of the Tulsa Community Fund, Mr. Farren has been instrumental in the combined charities of the city. For years he interested himself in the Tulsa Boys' Home founded by the Rotary Club.

At the time of his death he was one of the trustees of the University of Tulsa, chairman of the Permanent Community Trust Fund, vice president of the Tulsa County Public Health Association, a director of the Y. M. C. A. and Family Welfare Asociation, and interested in the work of the Mission of Redeeming Love. He was also an officer of the Chamber of Commerce and member of the Tulsa Club, Rotary Club, City Club and an officer of the Tulsa Country Club.

Mr. Farren was born in Indiana, Pa., in 1874. He became associated with the Mellon banking and oil interests at Pittsburgh when a young man. In 1912 he moved to Tulsa as general manager of the Guffey-Gillespie Oil Co. In 1918 he became an independent operator. In recent years he has been closely connected with T. J. Wood. The two men had adjoining offices in the Midcontinent Bldg.

Mr. Farren is survived by his wife, a son, Charles Rutherford, aged 3, his sister, Miss Mabel C. Farren of Pittsburgh and two brothers, Harry H. and Frank B. Farren, both of Pittsburgh.

Elk Hills Case Advanced

WASHINGTON, May 3.—On motion of special counsel for government, Owen J. Roberts and Atlee W. Pomerene, the Supreme Court has advanced to Oct. 4 argument on the appeal of the Pan-American interests in the Elk Hills naval reserve suit. The government won in both the federal district court and the court of appeals.

Pierce Oil to Reduce Capital

NEW YORK, May 3.—Pierce Oil Corp. stockholders at the annual meeting May 10 will vote on a proposal to reduce the capitalization by eliminating all unissued common and class B common and all treasury stock, both preferred and common. Adoption of the proposal would mean reduction of the corporation's annual franchise tax.

The Q. D. A. Founded on Sound Principles, Indiana Standard Official Says

By Edgar Bogardus
Assistant to Vice President in Charge of Marketing, Standard Oil Co. of Indiana

THE accompanying defense of the much-discussed Quantity Discount Agreement plan of marketing inaugurated by the Standard Oil Co. of Indiana, July 1, 1925, was made by Edgar Bogardus, assistant to the vice-president in charge of marketing for that company, and submitted as testimony before the Wisconsin Commission of Markets in the investigation that body recently made of this sales plan. It is the only official and detailed statement on the subject which the company has issued.

COMPETITION in the oil business has grown amazingly the last few years and from 1920 up to Jan. 1, 1926, the number of companies and individuals engaged in selling gasoline to the public has increased from 672 to 8234 in the field where we operate.

The tremendous growth in the number of motor vehicles and a corresponding increase in the consumption of gasoline being so apparent to everyone, this tempting situation has appealed to a great many as a wonderful opportunity to enter for one's self a business that to them appears to promise enormous profits.

Aside from his participation in the natural increase in gasoline consumption from year to year, the only way the ambitious dealer can expand is to search for ways of securing new customers, and those just entering the business are forced to adopt methods that are attractive enough to get whatever business they are ever going to have from companies already established.

Desirable business in the gasoline trade is, first, that of the customer who can take a relatively large quantity delivered at one time, second, that which involves assured deliveries at regular intervals, and the most attractive customer is the one that combines both large dumps and repeating deliveries without continuous solicitation.

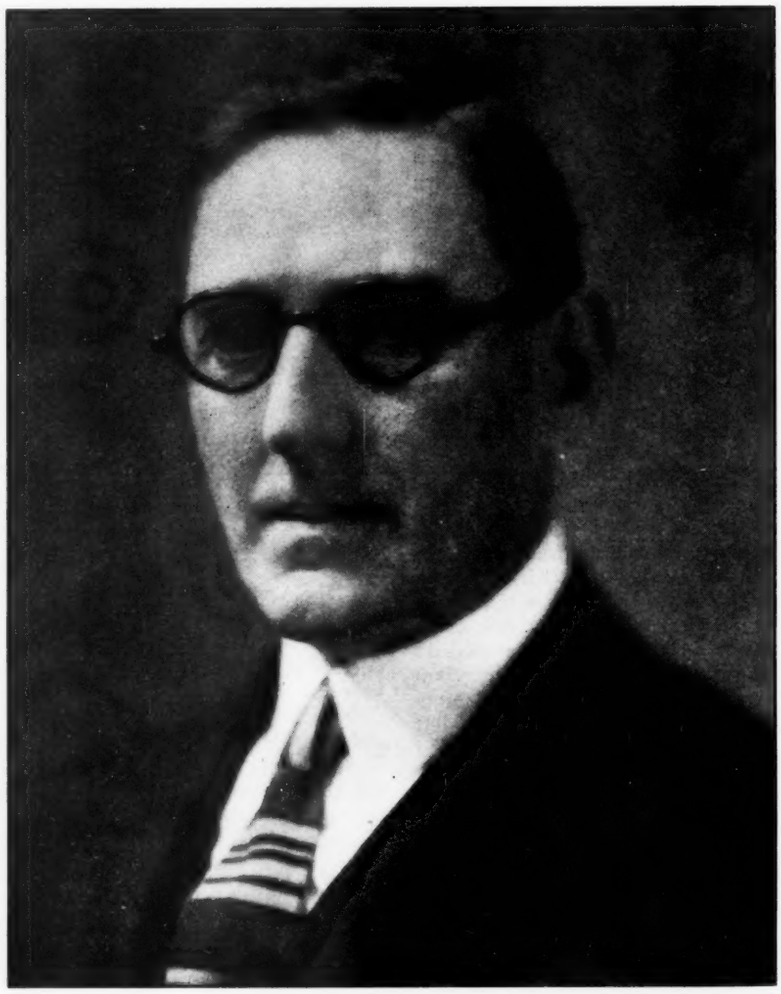
This sort of purchaser is of two types; the reseller who operates a garage, or service station, and the consumer, such as large department stores and transfer companies, using fleets of trucks and cars in the conduct of their business, and buses and taxicab concerns, all buying either from tank wagon or at service station from some jobber.

Year by year this preferred class of business has developed materially and the increase in the number of curb pumps throughout the country generally is a matter of common observation. The result of the increased number of prospects of this type has (together with the astounding growth in the number of those engaged in selling gasoline) greatly intensified competition and brought about forced and vigorous efforts to get and hold this attractive business.

The One-Price System

IT was the general practice of the earlier companies in the gasoline business to make one price for all classes of service and the reseller charged such higher price over what he paid as he could get. Later on a differential of 1 cent per gallon was established between the tank wagon and service station price and this continued up to March 13, 1922, when the differential was made 2 cents per gallon.

Previous to July 1, 1925, gasoline business was solicited by our company on all classes of trade at the same price for the same class of service. The buyer at the service station taking one gallon and requiring the undivided attention of the attendant paid the same price as did the truck owner or bus requiring 20 or 30 gallons. The farmer, located many miles out in the country, often on an almost impassable road, paid the same price for his 20 gallons, after repeated calls of the tank wagon, as did the consumer or the owner of a garage or service station in town, who took some



—Photo by J. L. Rivkin

A. V. Bourque
Secretary and Treasurer of the Association of Natural Gasoline Manufacturers. Mr. Bourque has been secretary of the association since its organization in April, 1921, and the duties and title of treasurer were added in May, 1925.

gasoline every day and often a whole truck load. Any oil man, following such a practice as described, would have to figure his profits on the average price realized on all kinds of business—that of large volume with low cost and small deliveries at a greater expense.

The appearance and growth of the desirable and most attractive type of business brought about many kinds of competitive methods adopted and practiced in efforts to secure such gallonage. It is obvious that deliveries of this character could be made at less expense than the cost incurred when a full day is taken to dispose of a tank wagon load, but just what that lower cost may be I cannot determine, because our company has facilities and men to serve every part of the public with all kinds of petroleum products

Our sales costs are a unit and there is no way in which the cost of this particular part of our business could be segregated. I do know, however, that in some cities where jobbers generally claim a tank wagon expense of 3½ to 4 cents per gallon, men have entered the business of delivering full tank truck loads to large industrial consumers and resellers at a price of 1 cent over the delivered cost in tank car lots. If these men have been able to make their expenses on this basis it would indicate that there may be as much as 3 cents per gallon difference between the cost of handling this assured large-dump business and the cost of the ordinary type of trade.

Serving the Farm Trade

FROM our own experience, we do have some knowledge of the other extreme, that is the exclusively high cost business. Our company has earnestly maintained its policy of serving the farmer, wherever located, at the established tank wagon price. In the sparsely settled districts, where long hauls are necessary, our cartage alone has run as high as 6 cents per gallon in addition to the operating overhead expense of maintaining the bulk plant from which the delivery is made. Any company engaged in serving all kinds of trade finds it necessary to take care of considerable business that is of the high cost type, such as small deliveries and long distance hauls, so that some of the less expensive part of the business, such as large dumps, steady customers, frequent calls and short hauls, must be secured in order to equalize the cost of distribution.

The competitive efforts to procure this most attractive business have been both direct and indirect. The indirect means have been the furnishing of pumps and tanks, light posts and air compressors, the construction of driveways and the erection of canopies, the purchase of equipment and then loaning it to the customer at no cost to him, and many other forms of concessions. The direct methods have been the granting of lower prices, either by an open posted reduction, secret cut to preferred tank wagon and service station customers, or by rebate at end of a period.

F. E. Rice

General Superintendent of the Gasoline Department, Phillips Petroleum Co., Bartlesville, Okla., one of the three vice presidents of the Association of Natural Gasoline Manufacturers, during the past year.

During 1924 and the early part of 1925, these direct price concessions developed to an alarming degree, not only in larger cities where more of the desired class of business existed, but throughout the territory generally.

It was very apparent that the day would come and soon, unless some definite general marketing practice was put into effect, when all the low cost business of such oil companies as maintained a single price schedule would be lost and they would be left with only the high cost part which they could not afford to handle. Our company was, of course, affected in exactly the same way as were others that were working under a single-price structure and was feeling the effect.

Q.D.A. Made Necessary

THIS situation made it clearly necessary that some new policy be devised if a fair share of the best business was to be regained or retained. Some practical and uniform application of the well established business custom in all other merchandising, that of giving a discount for quantity, was looked for. The first effort was the establishment of a price based on the quantity of a single delivery, as this appeared to anyone having studied the problem to be the best way out of the difficulty. In the summer of 1924 such a plan was put into effect in Chicago (a promising field for such an experiment, because of the great number of large users of gasoline in that city) but even there it did not bring about satisfactory results, for the reason that successful competitive efforts were made against this class of trade.

After another year of serious study on the part of the most experienced marketer in our organization, the present quantity discount agreement policy was put into effect and after eight months of experience we have found no reason to abandon it or to modify it in any essential particular.

It meets the competition offered us; it reduces cost of marketing by saving time in solicitation; it employs facilities and men regularly under expense and other-

—Photo by J. L. Rivkin

D. E. Buchanan

Second President of the Association of Natural Gasoline Manufacturers, who succeeded William M. Welch. Mr. Buchanan served as president during 1923 and 1924. He is vice president in charge of sales for Chestnut-Smith Corp., Tulsa.

wise idle; thus adding the gallonage without increasing the cost; the discount paid is more than offset by increased gallonage, again reducing marketing expense per unit; it brings customers to our service stations that have heretofore patronized our competitors at a cut price, and it is open to all who can and will take the quantities prescribed.

This contract policy applies the well recognized, general business custom and practice of making lower prices on quantities. While it is true that the agreement is not based on the volume delivered at one time, as a matter of fact, it reaches and is entitled to cover the class of business that can take large deliveries and where regular deliveries are the rule. It takes in the reseller and relieves him from investing in large storage in order to get the price his total business entitles him to. It covers the large consumer, who, under it, can take gasoline regularly without having to measure up each time the tank wagon calls to see if there is room enough in his storage tank to take some maximum quantity. It includes the commercial organization operating a fleet of trucks and cars, requiring supplies at different places as they move about their business, even from one city to another. It reaches the bus line and package freight inter-city concerns which, in the nature of their business, must take on gasoline at various points along the route traveled. It gives such customers the price they are entitled to as quantity buyers under a well established and recognized practice in all lines of trade. It assures them uniform quality (a very desirable thing to have) and it enables them to keep a close check on the gasoline their vehicles use.

In actual practice this contract reaches the purchaser who can handle a large volume at one time, as well as one who takes a material quantity over a period with deliveries at different times and places, and it does it without the difficulties that are encountered with a unit price discount scale.

Preferred Station Trade

LARGE deliveries at service stations are, of course, not common, although there is a considerable difference between the tank capacity of a motorcycle or Ford and that of an inter-city bus or large truck. This truck and bus business appeared to be attractive enough to cause our competitors operating service stations to offer price concessions to transportation concerns which used a relatively large volume in the course of a month. It was common practice of competitors throughout the territory to make the tank wagon price at service stations to this kind of business. The attractive feature in this was the securing of much additional business without any increase in operating expense, and for this reason, those who were making concessions to reach this business were able to consider it profitable as it increased the gallonage at their service stations where men and facilities were otherwise idle.

To us it appeared that there was sound economic ground for seeking this attractive service station business by offering a discount. Service stations are constructed and manned for the peak load of business, and additional commercial business (which for the most part comes at other than rush hours) can be handled without any additional expense for operation. The granting of a lower price for such additional business does not, therefore, impose any burden on the regular business; but, on the contrary, the profit made on the new business reduces the load of service station expense to be borne by the former trade.

The quantity discount agreement policy, adopted by our company about July 1, 1925, was put into effect throughout its territory. This was the proper thing to do with any sales and price policy which does not have purely local application. Practices in the gasoline business are much the same in any of the states where we operate. Any practice that succeeds in securing business for the company that first adopts it soon spreads so that it was quite apparent to us that if a solution were at hand it should be applied universally

It has been intimated that the feature of the contract that permits multiple deliveries tends to develop a monopoly on the part of the large companies, such as the Standard Oil Co. No monopoly is set up here and there is no tendency to develop a monopoly on the part of this company. It must be borne in mind that the facilities of the competitors as a whole are about double those of ours in service stations alone, without counting the other numerous outlets for gasoline that compete with us. This aggregation of units in the business acts, in effect, as a single force against which we are obliged to contend and should be viewed from this angle rather than from the standpoint of a single individual, who enters the business with one station and finds a situation in some lines of this business that will not admit of his one station serving.

The Q. D. A. does not tie to us, all of the requirements of a customer who has a contract with us, for the reason that he is at liberty to buy elsewheere and the record shows that this is done.

A. P. I. Opposes Changes in Regulations Covering Gasoline Transportation

CLEVELAND, May 3

ANY general changes in the Interstate Commerce Commission regulations of shipment of inflammable liquids were opposed by representatives of the American Petroleum Institute at a hearing in Washington, April 21. A few changes had been proposed by the Bureau of Explosives and others by the I. C. C. The A. P. I. representatives of private tank car interests, the American Railway Association tank car committee, and the Bureau of Explosives joined in requesting the commission to extend for 60 days the time for consideration of the commission's proposal that it make specifications for tanks on tank cars.

Present regulations involving vapor pressure tests, testing of safety valves, placarding of empty tank cars, removal of dome covers of loaded tank cars, and tampering with dome covers of empty cars were regarded as adequate and were being observed to a reasonable degree, it was shown. Strong opposition to the elimination of bottom discharge valves from all tank cars was expressed in a statement to the commission by W. R. Boyd, Jr., assistant secretary and treasurer of the institute.

Seven Subjects Considered

SEVEN subjects relating to tank car transportation were considered by the institute's general committee on railroad transportation, its mechanical sub-committee and the committee on vapor pressure at a joint meeting and later with Col. B. W. Dunn, chief inspector, Bureau of Explosives, and L. I. Doyle, explosive agent of the I. C. C., before the statement of Mr. Boyd was drafted. The seven subjects were designated in the statement as follows:

Vapor pressure tests, safety valve tests, carding of tank cars or safety valves overdue for tests, removing dome covers from loaded tank cars while under pressure, tampering with dome covers of empty cars, elimination of bottom discharge valves, and placarding of loaded tank cars used for the transportation of dangerous articles and empty tank cars previously loaded with dangerous articles.

The vapor pressure committee concurred with the Bureau of Explosives in recommending no change from the present method of determining vapor pressure of gasoline for transportation classification, described in Bureau of Explosives M. C. L. 147. The institute does not object to the commission's incorporating this method in its regulations.

The mechanical sub-committee favors extending the time for testing safety valves to five years instead of having needless periodic tests as at present. Present type of valves has been in use since 1903 and the institute committee stated nothing disturbing had been found in the record of accidents due to failure of the valves to function. This committee and the A. R. A. tank car committee are observing and suggesting improvements in safety valves adaptable to tank car use. New cars will be equipped with improved valves as valves are developed, Mr. Boyd said.

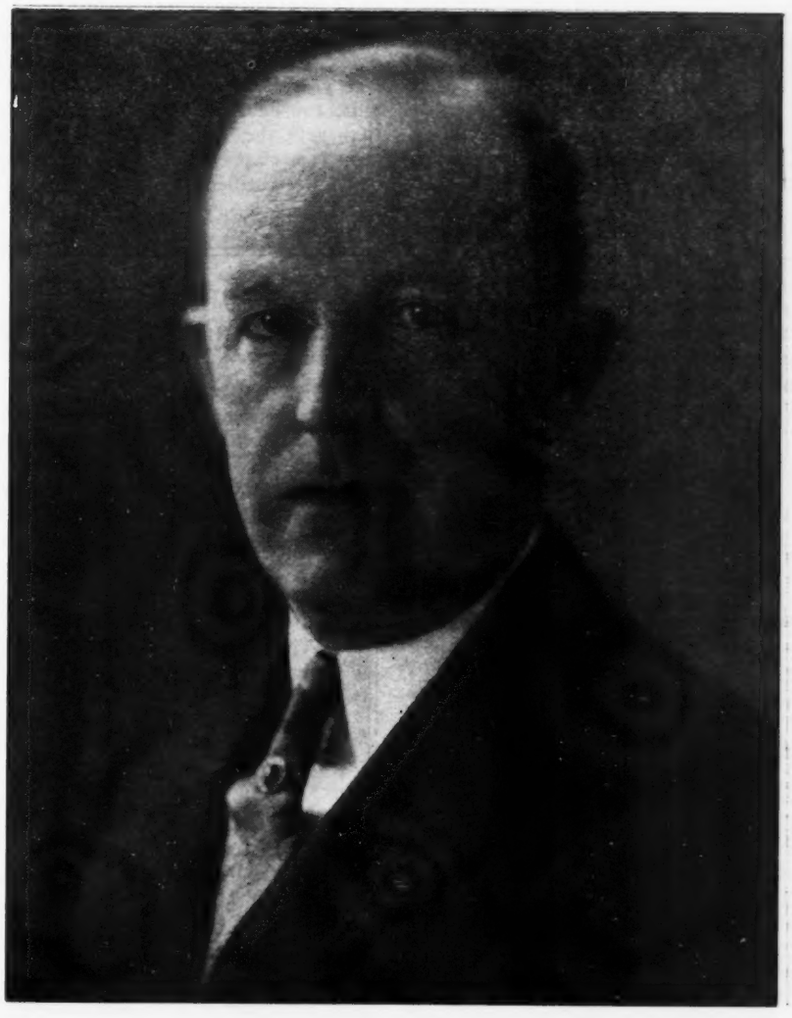
The A. P. I. general committee of railroad transportation and the bureau concurred that present I. C. C. regulations governing removal of dome covers from loaded tank cars were adequate when faithfully carried out. The institute and bureau are working on an educational effort to reduce the possibility of accidents caused by the sudden releasing of internal pressure, Mr. Boyd said. Devices for the loading and unloading of tank cars without removal of the dome covers was a question of economy and convenience and should not be advocated as a safety measure, Mr. Boyd argued.

Tampering with empty dome covers is a problem that will be taken up in the educational work. The institute favors keeping on cars the original "inflammable" placards until cars have been cleaned. Its desire for such retention of placards has repeatedly been expressed to the commission, Mr. Boyd again said.

Want Bottom Valves Retained

FIVE reasons were set forth why bottom discharge valves should not be eliminated. They were:

"1.—It is of the utmost importance in



William M. Welch

First President of the Association of Natural Gasoline Manufacturers. Mr. Welch was instrumental in organizing the association in April, 1921 when 75 representatives of 53 casinghead gasoline manufacturers joined the association. Mr. Welch was re-elected president in April, 1922. He was vice president of the Tidal Refining Co., Tulsa, and is now in consulting engineering business in Tulsa.

the petroleum industry that tank cars be freely interchangeable between light oil service (motor gasolines and refined oils) and heavy products, such as various grades of fuel oil, crude oil, lubricating oil and road oils. The elimination of the bottom outlet valves would mean that all products must be unloaded through the dome and it is impossible to unload by this method the heavy stocks due to the inherent nature of the product. Without interchangeability an enormous, useless and uneconomic burden would be imposed upon an industry distributing essential products without any compensating benefit to the industry or to the public.

"2.—It is practically impossible to unload through the dome some grades of casinghead napthas, due to the difficulty in maintaining suction on pump.

"3.—There will also be involved the question of returned contents in the case of products that would not be entirely removed in overhead unloading, resulting in continual claims for shortages on the part of consignees and in freight claims.

Important Discharge Factor

"4.—The institute's committee is aware of the fact that several oil companies do unload certain products through the dome, but this practice is by no means general. Attention is called to the fact that these companies follow the practice only at their bulk sales stations. They could not dispense with bottom outlet valves because it is their practice in their refineries to unload those same cars through the bottom outlet connection. It would be impracticable to unload at refineries by means of an overhead system on account of the volume and variety of products unloaded. Here again interchangeability is an important factor.

"5.—The institute's committee would point out that the majority of the consignees would not be equipped to unload cars by the overhead method and the installation of these facilities would involve a needlessly large monetary expenditure."

The institute committee opposed changes in placard requirements as suggested by the Bureau of Explosives and asked that the commission "should not unconsciously lend its power of regulation to such a procedure," that is, the placing of special placards on cars which have contained an inflammable liquid and which have not yet been cleaned.

Elimination of bottom outlet valves, equipping cars with permanent dome covers for unloading through the domes, installation of a new type safety valve, and additional placards would cost the industry $15,000,000, the institute committees estimated. Installation of facilities for overhead unloading would cost another $15,000,000, bringing the total cost to make changes in transportation equipment and placarding up to $30,000,000.

Kenyon L. Reynolds

General Manager, Pacific Gasoline Co., Los Angeles, a director of the Association of Natural Gasoline Manufacturers, Tulsa.

Mr. Boyd used Bureau of Explosives figures to show that transportation fires last year, 32 involving inflammabl liquids, caused a total loss of $607,189. At that rate, he argued, 775 years would have to elapse before the investment could be justified.

Coming Meetings

Michigan Independent Oil Men's Association, Hotel Downey, Lansing, Mich., May 6.

Association of Natural Gasoline Manufacturers, Mayo Hotel, Tulsa, May 5, 6.

Kansas Oil Jobbers' Association, Lawson Hotel, Wichita Kans., May 7.

U. S. Chamber of Commerce, 14th annual meeting, Washington, D. C., May 11, 12, 13.

Wisconsin Independent Oil Jobbers, Association Hotel Conway, Appleton, Wis., May 12.

National Oil Scouts Association of America, Gunter Hotel, San Antonio, Tex., May 17, 18.

Natural Gas Supply Men, Inc., at International Exposition Grounds, Tulsa, May 17, 18, 19, 20.

Minnesota Petroleum Association and Wisconsin Independent Oil Jobbers Association, joint meeting, Hotel Stoddard, La Crosse, Wis., June 16.

American Petroleum Institute, Standardization Conference, Hotel Broadmoor, Colorado Springs, Colo., June 15, 16, 17.

Of the 32 fires 19 were due to either derailment, collision and lightning, and therefore furnished no experience on which to base discussion of mechanical appurtenances. An analysis of the 32 fires follows:

Cause	Fires No. of	Killed	Injured	Am'nt
Derailment	16	5	3	$556,694.
Collision	2		2	10,643.
Lightning	1			1.
Total	19	5	5	$567,338.
Pushed over bumping block	1			500.
Transfer of contents	1			17,000.
Outlet cap off and valve open	1			1.
Lighted cigarettes & matches	4	1	2	1.
Lanterns	5	1	8	6,349.
Nearby fires	1			16,000.
TOTAL	13	2	10	$ 39,851.
GRAND TOTAL	32	7	15	$607,189.

The general committee on railroad transportation deferred discussion on a letter from W. E. Prendergast, member of the Western Classification Committee, to Col. Dunn recommending that maximum outages be specified. Some shippers are taking outages of 7 and 8 per cent, Mr. Prendergast wrote, contending it was necessary for safety.

Defers Action on Definition

THIS committee also deferred action on a proposed amendment to the regulations defining natural gasoline. The proposed amendment is: "Liquid petroleum products made from gases or vapors by means of the compression or absorption process, alone or blended with other products, must be described as casinghead gasoline when the vapor pressure at 100° F. (90° F. Nov. 1 to Mar. 10) exceeds 10 pounds per square inch, and does not exceed 20 pounds."

Oil company and institute representatives attending the conferences were: General committee on railroad transportation: W. R. Boyd, Jr., (chairman), J. S. Cooke (secretary), American Petroleum Institute; L. F. Bayer, Association of Natural Gasoline Mfrs.; B. J. Burchett, Shaffer Oil & Refining Co.; E. A. Fall, Interocean Oil Co.; Henry Hauseman, Pure Oil Co.; C. H. Lown, Imperial Oil, Ltd.; E. D. Sheffe, Standard Oil Co. of New Jersey; B. C. McPherson, Sun Oil Co.; C. A. Porter, Indian Refining Co.; E. H. Porter, Atlantic Refining Co.; E. C. Sicardi, Union Tank Car Co.; H. R. Smith, Great Southern Refining Co.; A. M. Stephens, Standard Oil Co. of Kentucky, and Fayette B. Dow, A. P. I.

Mechanical sub-committee: Thomas Beaghen, Jr., Mexican Petroleum Corp.; E. A. Kraft, Pure Oil Co.; A. E. Smith, Union Tank Car Co., and A. C. Young, The Texas Co.

Vapor pressure committee: H. B. Bernard, Sinclair Oil & Gas Co.; H. C. Cooper, Hope Natural Gas Co.; E. J. Goldman, Standard Oil Co. of Indiana; B. L. Pillow, Standard Oil Co. of Louisiana; H. L. Shoemaker, Standard Oil Co. of New Jersey, and R. P. Anderson, A. P. I.

Wentz Takes Daily Gauge of Each Well in Tonkawa Field

INDIVIDUAL gauging of wells in order to determine the exact production and condition of each is one of the refinements of production methods which, while not generally practiced in the Mid-Continent field, is a source of valuable information. It permits the operator to keep accurate check on each well's performance and enables him to detect at once a falling off in oil production or an increase in water so that he may take the necessary steps to rectify the trouble.

An interesting example of one method of taking individual well gauges is to be found in the Tonkawa field, Okla., on the leases of the Wentz Oil Corp. This company takes a separate gauge of each well every day on leases where production is small, while on flush properties such as its Mahoney lease, hourly gauges are taken. This practice having been inaugurated when the leases first went on production, the company has an accurate record of the performance of each well since it was drilled in. Such records have been especially valuable since the deep sand development at Tonkawa brought many problems of production to be solved. In making various experiments on these deep wells to determine the most satisfactory method of operating them, the individual performance records have furnished valuable data.

Fig. 1 accompanying this article shows a typical flow tank on the McKee lease of the Wentz Oil Corp., a property consisting of 160 acres and having more than 50 producing wells. As shown in the picture, the flow line from each well is marked with the well number on the risers through which oil enters the tank, all the risers being connected with a header at the top, through which all the oil passes, thus making only one opening in the tank, instead of one for each lead line. These risers are equipped with a system of stopcocks so arranged that any well can be cut out from the tank and its stream diverted so that its production may be gauged.

This is accomplished through the use of a small portable tank, such as that shown in Fig. 2. This tank is moved around from one flow tank to another, remaining at each until all the wells going into that tank have been gauged. As soon as it has finished at one tank, it moves on to the next, and as there are five of these tanks on the McKee lease, the "tank-wagon" is pretty generally on the move. The small tank holds about 50 barrels. When it is desired to gauge a well, its flow is diverted from the main tank through a special connection to the portable tank, where its production is measured over a certain period by use of gauge pole.

After gauging a well, the oil that has accumulated in the small tank is pumped out through an "Armstrong" pump mounted on the back of the wagon, this placing it in the gathering line whence it flows by gravity to the stock tanks or to storage. This method of taking individual well gauges is very simple for the reason that the company is not running its oil to a pipe line buyer and therefore does not have to put back in the tank the oil diverted when the individual gauges are taken.

"Tonics for Oil Wells"

Some learned discussions have been held—several technical articles made public by the U. S. Geological Survey—on the possibility of increasing recovery of oil by chemical treatment.

A National Petroleum News staff writer grew curious last week and went looking about to see whether anyone was practicing what the Survey had preached. The surprising results of what he found will be published in the issue of May 12.

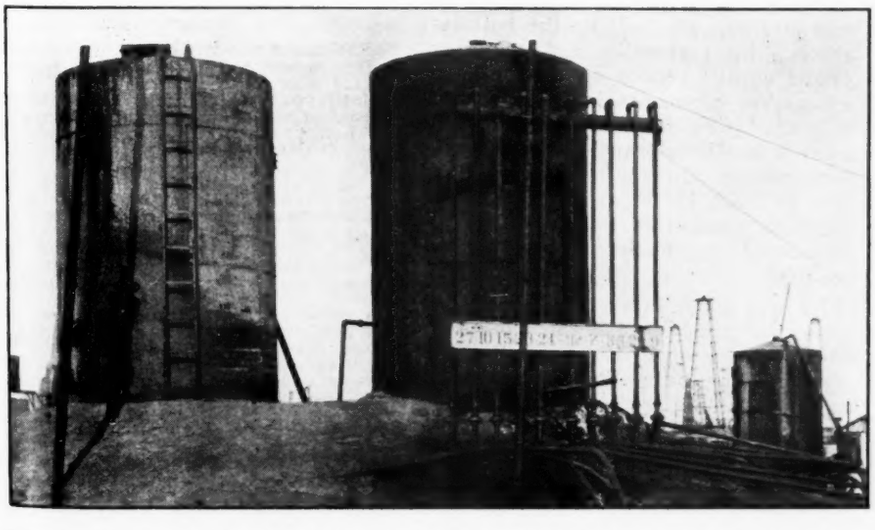


Fig. 1—Typical flow tank on McKee lease of the Wentz Oil Corp., Tonkawa field, showing lines from different wells. In the background is the small portable tank used for taking individual well gauges.

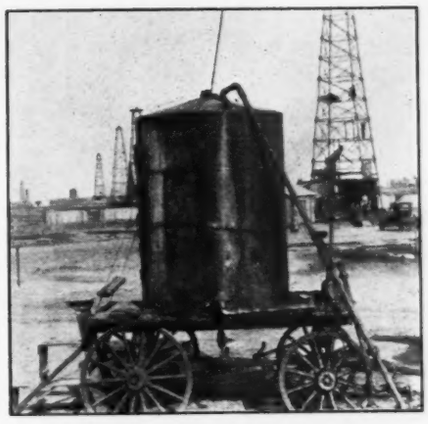


Fig. 2—Portable tank used for taking individual well gauges, Wentz Oil Corp., McKee lease, Tonkawa field. The well to the right of the tank is the No. 49, on which was used the first installation of high-pressure compressors for flowing with residue gas in the field. This well is now equipped with a hydraulic long-stroke pump.

Add Two New Defendants To Cracking Suit

CHICAGO, May 4.—Two new primary defendants have been added to the five originally named in the suit brought by the government in federal court here nearly two years ago against licensors and licensees of cracking processes, charging restraint of trade. The names added are Joseph H. Adams, inventor of the Adams process purchased by The Texas Co., and the M. W. Kellogg Co., New York, which at one time was licensor of the Fleming process and now is licensor of the Cross process. The government's petition as amended to include these new defendants was not contested.

The amended petition was filed by Edward J. Hess, assistant U. S. district attorney, May 3, before the three judges of the United States circuit court of appeals, sitting as an expediting court.

The original petition, filed June 25, 1924, charged restraint of trade against 51 oil companies, five being licensors and 46 licensees of principal cracking processes, citing that contracts to use the processes limited territory in which gasoline could be sold, or contained some other provision tending to set up a monopoly and asking that mutually protective agreements between licensors be done away with.

The principal defendants, or licensors, named in the original suit were the Standard Oil Co. of Indiana, Standard of New Jersey, Standard Development Co., The Texas Co., and the Gasoline Products Co.

Wm. (Bill) G. Long

The Oil Man's Creed

By BILL LONG

From his book of poems "Lubrications"

We believe in this life. We believe that nature intended all men to be equal according to his worthy desires.

We believe in making the best of the present, forgetting the bad of the past, striving earnestly for the future betterment of all.

We believe when the wheel of fortune is turned that the best servant will be the best master; the mistakes we have made in the past will be the guiding buoy of the coming years. True equality is the equality of all.

We believe to err is human, but to make the same mistake twice is a crime. The dusters and the gushers are but the crucible that separates the dross from the pure gold of life.

We believe that when we die our bodies return to dust whence the caldron nature uses it to bring forth the pink-hearted rose and the blushing fruit.

We believe in the immortal soul; it is ours to burnish, brighten and glorify, or to shrivel, blacken and damn.

Bill Long Dies Following Operation

TULSA, W. G. LONG, one of the best known and best-loved men in the Mid-Continent field, and a real veteran of the oil business, died after an illness of about two weeks following an operation. He would have been 62, had he lived until May 10.

An oil producer and later a manufacturer of field equipment, Bill Long had always within his soul a bright vision of the adventure and romance of the oil producing industry. He expressed it in poetry that made his name known through oil fields everywhere.

Bill Long was intimately connected with the oil business for more than 40 years. During that time he ran the whole gamut of work, having done about all there is to do in connection with the production of oil and the sale of oil country supplies. In addition to his many activities in oil, he found time to write the poetry that made him known wherever oil men gather, and to make and hold friends by the thousands.

Long was born at Parker's Landing, Pa., grew up to young manhood in that country, and attended Allegheny College, Meadville. Having become interested in oil from watching drilling wells in the vicinity of his grandfather's farm, he went into that business as soon as he left college, and worked in the oil fields of Pennsylvania, West Virginia, and Ohio. In the early '90's, when Robinson, Ill., was the mecca for wildcatters and oil men generally, Bill Long was early on the ground. There he and Joe Trees drilled the first gas well in the field and also established the first supply store. From Robinson, he followed development into Indiana, and went to Louisiana when the Caddo field came in.

From Caddo, Bill went to Wichita Falls, Tex., where, from 1911 to 1913, he wrote of developments in the Mid-Continent fields for National Petroleum News. It was in this magazine that many of his poems were first published. In 1913, he came to Tulsa, and lived here until his death. After a number of years as an independent oil producer, Long took over the Robinson Packer Co. of Coffeyville, Kans., and became its treasurer and general manager. This was in 1920. He built up the business through his personality and unceasing efforts until it became one of the largest packer companies in the industry, his "Red Packers Pack" having become a familiar slogan in every field in the country. In the spring of 1925, Bill sold out his interest in the company on account of poor health, and announced that he intended to take a long rest.

He was active in every sort of civic enterprise, and was a devoted partisan of any cause which he espoused. He was a Mason, a member of the Optimists' club, the City club and the Chamber of Commerce. He was also a member of the Natural Gas Association of America and its affiliated society, Natural Gas Supply Men, Inc., and was a hard and enthusiastic worker for the success of these organizations. One of the saddest features of his death at this time is that it occurred just before the 21st annual meeting of the natural gas men, which is to be held in Tulsa this month, and which was brought here largely through his unflagging efforts.

Besides his widow, he is survived by a son, Clarence R. Long, of Tulsa, a brother, Rev. Samuel P. Long, of Naples, N. Y., and two step-children, Edward Little and Sallye Little, both of Tulsa.

Just before he submitted to the operation which afterwards proved fatal, Bill Long, evidently feeling that the end was near, composed the following, the last of his many poems:

DEATH

Sometimes I think you are very near
For in my brain there is a fear
That I may on my courage ride
Until your white horse comes beside;
Then you will fear my static breath
When you will know you've won,
O death!

I stayed your hand for many a year,
I've lived a life that had no fear,
Yet through the years of this life's ride
Oft have I stood and watched the tide
Ebb and flow, with each faltering breath
I won that race from you, O Death.

It's quite a game or quite a race
When day by day we see your face,
There are some folks, that would like to shun,
Your ghastly face, but I'm not one.
For you come to all, with withering breath,
I know that we're all born of death.

You cannot shake my faith in God
Who rules the world from stars to sod.
You smash and break the potters' clay
And scatter fragments on your way.
I'll claim God's promise with my last breath
And be victorious o'er you, O death.

First Four Months of 1926 Show Gain In Oklahoma Crude Production

By A. F. Hinton
N. P. N. Staff Writer

TULSA, May 1

OKLAHOMA production recorded another small increase during the past week, advancing slightly more than 1000 barrels to a daily average of 463,025 barrels, according to National Petroleum News' estimate. It was a week of only minor changes in all fields, but with small increases in several areas sufficient to cause the state as a whole to show a gain. The state's crude output has undergone some rather violent fluctuations of late, due partly to the rapid rise and fall of Garber while the Sinclair No. 29 Hartley was in its prime, followed by several big wells at Wewoka which came in as the Garber well went out.

At the beginning of March, Oklahoma production was 453,000 barrels daily, at the end of a period of increases extending over five successive weeks. It then declined for two weeks, getting down to 451,000 in the week ending Mar. 20. In the next week, the first effect of the big Garber well was noted, the state's production jumping 10,720 barrels. This was followed by another increase, this time amounting to 16,600 barrels, and running production up to 478,350 barrels daily. Both Garber and Wewoka participated in this notable advance.

The following week saw a decline of 9500 barrels, followed by another drop of 10,230 barrels for the week ended April 17. During the past two weeks, a gain of about 4400 barrels has been recorded. As a net result of the recent splurge, with production again on an even keel, at least for the moment, the states output is some 10,000 barrels a day higher than it was March 1.

For the first four months of 1926, Oklahoma production has averaged 453,780 barrels daily. This compares with a daily average of 478,500 barrels for the last four months of 1925. During all of 1925, the daily average production of Oklahoma was approximately 465,000 barrels daily, while in 1924 it was some 468,000 barrels, which was the highest ever recorded by the state as a daily average over a period of one year. Production during January, 1926, averaged 444,611 barrels daily, a decline of 20,000 as compared with December, 1925. Each month since, however, has shown a gain. In February, the state averaged 449,799 barrels daily, in March, 454,539 barrels, and in April, 466,173 barrels.

It is noteworthy that this increase in production during the past four months is attributable to only a small number of wells in three fields, almost none of it having come from new discoveries, except insofar as the finding of a deep sand in a known field may be put in the new discovery class. The three fields responsible for the production gain were Garber, Wewoka, and, to a lesser extent, Braman. Garber, now averaging 34,105 barrels daily, was making 32,000 barrels Jan. 1, and was down to 22,000 barrels in February. With the big Sinclair well doing its stuff, it got up to 47,520 barrels for the week ended April 3. Wewoka was making about 12,000 barrels Jan. 1, as compared with a daily average for the week just closed of 34,885 barrels. Braman, now producing 13,570 barrels, was down to 6100 barrels at the first of the year.

Marland Wildcat Shows Water

The important wildcat well of the Marland Oil Co., in Grant county, mentioned last week as flowing 20 barrels an hour from the Wilcox sand topped at 4342 feet, is still regarded with respect as having opened up new territory, in spite of the fact that it is not making so much oil as it promised at first, and is making some water in addition. After its initial flow at the rate of 20 barrels an hour, it settled to about 250 barrels daily at one foot in the sand. During the week it was deepened to 4345 feet, or three feet in, where it went into water and its production fell to 170 barrels in the ensuing 24 hours. It is now reported maintaining about that flow, and cutting the oil about 10 per cent.

This well, which is known as the No. 1 Webb, is located in the center of the NW NE NE of 2-27-3W, and is about three miles north of the old Deer Creek field, also in Grant county. Except for this small field, the new well is about 15 miles from the nearest important production.

Other wells now drilling in Grant county include the test of Cowden et al. on the Vollmer farm, in the NEc SW of 22-25-4W, which is now reported drilling below 1470 feet after having been shut down for the past six months. This well is a little more than a mile west of the town of Salt Fork. Gypsy Oil Co. is also drilling a deep test in Grant county, this being its No. 2 Muegge, in the NEc NW of 33-26-3W. This well was standardized at 4100 feet and is drilling ahead with cable tools. Another Grant county well starting up after having been shut down for some time is the Flannagan et al. No. 1 Sherer, in the NEc of 16-26-3W, five miles southwest of Deer Creek. This well was drilling at 680 feet at last reports.

Searight Well 280 Barrels

Another important wildcat well mentioned last week as showing for a producer was the F. J. Searight No. 1 Davis, in the SEc NE SE of 33-10-6, five miles north of the town of Seminole, in the county of the same name. Topping the Hunton lime at 4114 feet, the well was flowing 15 barrels an hour when drilled two and a half feet in. During the week it was drilled to 4119 feet, or five feet in, and is making 280 barrels a day, with better than two million

Drilling Operations in Oklahoma, Kansas and North Texas

	May 1 — Week Ending — April 24									
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	2	11	29	1	43	2	13	26	1	42
Other Osage	6	16	55	9	86	5	8	56	11	78
Bristow-Cushing	29	31	177	36	273	28	41	173	33	275
North Oklahoma	13	44	181	73	311	17	36	170	74	306
South Oklahoma	20	37	165	31	253	23	35	152	46	256
Muskogee	...	9	38	15	62	...	11	40	14	65
Okmulgee-Bristow	9	66	123	28	226	6	60	109	39	214
Tonkawa	1	...	7	1	9	1	1	6	1	9
Wewoka-Cromwell	24	26	137	27	214	20	15	130	32	197
Total Oklahoma	104	240	912	221	1477	100	220	871	251	1442
KANSAS	89	104	230	111	534	96	91	228	122	537
NORTH TEXAS										
Eastland County	...	6	56	10	72	...	10	40	8	58
Stephens County	...	17	37	11	65	...	17	37	11	65
Texas Panhandle	...	62	133	24	219	...	68	127	26	221
Mexia District	...	...	2	4	6	...	...	2	4	6
E. Texas Wildcats	...	4	5	18	27	...	5	7	16	28
W. Texas Wildcats	...	77	264	86	427	...	87	254	87	428
Wichita Falls	...	71	152	42	265	...	120	162	36	318
Total N. Texas	...	237	649	195	1081	...	307	629	188	1124
GRAND TOTAL	193	581	1791	527	3092	198	618	1728	561	3103

Completions in North and Central Texas, Week Ended May 1

Archer County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Hart-Hopkins	1-Moss	H&TC	928– 935	20
Gulf	7-Jackson	Aldridge	1551–1555	75
Humble	4-Wolfe	SP	1335–1338	30
Texhoma	16-Oldham	Hubble	1334–1373	35
Texas	11-Richardson	SAR	1388–1393	138
Gulf	2-Jeske	McCoy	1166–1172	115
Gulf	4-Jeske	McCoy	1157–1168	51
Sun	1-Brown	McCoy	1144–1156	400
Texas	9-Jeske	McCoy	1151–1170	58
Texas	10-Jeske	McCoy	1141–1163	267
Camp	4-Roching	BBB&C	1168–1182	25
Bridwell et al	1-Beardon	Hopkins	1056–1075	100
Kell-Kruger	1-Prideaux	Hand	692– 695	12
Hart	1-Merwitz	SP	T.D.1850	Dry
Burns et al	1-Wilson	ATNC	T.D.1665	Dry
Pandem	1-Coffield	Richardson	T.D.1455	Dry
Gulf	1-Abercrombie	SP	T.D.1520	Dry
Primrose	9-Wolfe	Poitevant	T.D.1520	Dry
Texhoma	3-Abercrombie	SP	T.D.1214	Dry
Gulf	1-Herron	Sec 85	T.D.1182	Dry
Flowers et al	1-McCarty	Chisholm	T.D.1507	Dry
Harris et al	1-Conner	Palmer	T.D.1350	Dry
Tidal	1-Terrell	Herring	T.D. 708	Dry
Gulf	1-King	TEL	T.D.1509	Dry

Brown County

Cosden	8-Westerman	Mitchell	T.D.1350	Dry
States	2-Allen	Delgado	T.D.1315	Dry
Mahlstead	1-Eubanks	Mirchell	T.D.1235	Dry
Barclay et al	8-Dunn	Delgado	1117–1135	75
Barbour	4-Prater	Travis	T.D.1319	10
Savings et al	2-Byrd	Travis	1330–1343	10
Mimms et al	2-Gaines	Travis	1316–1334	8
Conway	6-Chambers	Logan	1292–1310	250

Callahan County

Canyon	3-Barr	Anderson	1424–1438	15
Mook et al	1-Baum	Vigil	1627–1636	2M

Carson County—Panhandle

Marland	1-Burnett	I&GN	3125–3135	800
American	1-Burnett	K&GN	T.D.3138	Dry

Clay County

Neff et al	1-Roper	Rollings	T.D.1203	Dry

Coleman County

Mahlstead	1-Overall	Ferguson	T.D.1404	Dry

Collingsworth County—Panhandle

Continental	1-Hughes	H&GN	T.D.3508	Dry

Crane County

Marland	1-Cowden	GC&SF	T.D.3483	Dry

Crockett County

Humphreys	1-Univ	Univ	T.D.4382	Dry

Eastland County

Lobaugh et al	1-Casey	Robinson	T.D.1780	Dry
Pettit et al	1-Brashears	ET	T.D.3450	Dry
Lewis	1-Schmick	H&TC	T.D.1810	Dry
Hart	1-Johnson	H&TC	T.D.3195	1M

Freestone County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Patterson	1-Bounds	W. Jackson	T.D.3180	Dry

Glasscock County

Choate-Henshaw	1-Neal	TP	T.D.3302	Dry

Gray County—Panhandle

Wilcox	2-Reynolds	L&GN	T.D.2890	600

Hutchinson County—Panhandle

American	1-Whittenberg	D&SE	2775–2809	150
Gibson	2-Whittenberg	H&TC	2930–2938	200
Skelly	1-Whittenberg	Whitley	2928–2948	200
Gibson	1-Whittenberg	H&TC	2902–2940	40
Phillips	1-Weatherly	M&C	3040–3065	120
Lenix et al	1-Smith	M&C	2914–2999	5480
Travelers	1-Kingsland	M&C	2870–2945	300

Jack County

Buttram	2-Preston	Chairs	2062–2067	40

Limestone County

Pure	3-Lindley	McNulty	T.D.1445	Dry

Mitchell County

Marland	1-Shumaker	TP	T.D.3355	Dry

Montague County

Texhoma	6-Rowland	Chambliss	1084–1130	60
Benton-Woods	2-Hynds	Wall	963– 980	60

Navarro County

Penn et al	1-Kenner	Love	T.D.1850	Dry

Reagan County

Texon	1-Univ.	Univ	2262–2272	350
Marland	1-Cole	Roach	T.D.1786	Dry

Shackleford County

Dunbar et al	1-Reynolds	ET	T.D.1003	Dry
Zeigler et al	1-McAuger	H&TC	1510–1522	3M

Stephens County

Livingston	1-Hodges	TP	1972–1976	12M
Eidson et al	4-Crowley	TP	1812–1867	67
Mook-Texas	4	TP	T.D.2228	Dry

Sterling County

Harty	1-Reynolds	H&TC	T.D.3300	Dry

Throckmorton County

Murchison-Fain	1-Portwood	Wilson	T.D.1513	Dry

Upton County

Zock et al	1-Ruhmann	GCSD et al	T.D.3501	Dry

Wilbarger County

Garrison et al	1-Waggoner	H&TC	T.D.2640	Dry
Phillips	2-Waggoner	H&TC	1845–1857	300
Milham	7-Waggoner	H&TC	2309–2311	140
Rio Bravo	1-Waggoner	H&TC	1532–1539	20

Young County

Atkinson et al	1-Ford	Carter	2500–2525	82
Clark et al	2-Moore	TEL	1005–1007	25
Bridwell et al	5-Farmer	Anderson	1053–1061	7
Wilson	7-Bearden	Hopkins	1064–1083	40
Shasta	2-Winkler	TEL	T.D.1274	Dry

cubic feet of gas. Apparently this is a real well, and will mean a lot of new work in the vicinity.

The Wewoka deep sand area ended the week with production of 27,198 barrels, as compared with 28,964 barrels for the corresponding day last week, a decline of more than 1700 barrels. This production is coming from 10 wells, the same as last week, although it had been expected that the 11th well would be in before this week ended.

The 11th well, which apparently is to be the Magnolia Petroleum Co. No. 5 Franz, in the SEc SW SW of 32-8-8, is not looking so favorable at this writing. It topped the deep pay at 4167 feet and has been drilled to 4189 feet, or 22 feet in, without having made a flow, although it has a hole full of oil. It was still drilling ahead in the sand at last reports. The Prairie Oil Gas Co. No. 1 Walker, which last week looked as though it would be the next well in, had not reached the pay as we go to press, but was drilling at 4140 feet, after having topped the Hunton lime at 4035 feet. This well is located in the SWc SE of 32-8-8, about half-way between the Magnolia discovery well and the Dixie Oil Co. well which last week extended the field nearly a mile to the east.

Magnolia Petroleum Co's. three Wewoka deep wells, No. 2 and No. 3 Harjo, in 5-7-8 and No. 3 Franz, in 32-8-8, are producing 11,973 barrels. The Atlantic Oil Producing Co. and Independent Oil & Gas Co. No. 1 Simon, in the NWc NW SW of 5-7-8, farthest south well in the field, is making 1350 barrels. This well was deepened 2½ feet during the week and is now at total depth of 4190 feet, or 23 feet in the pay. Amerada Petroleum Corp. is getting 6714 barrels from its No. 1 and No. 2 Frederick, in 5-7-8, and W. R. Ramsey No. 4 Amos, in 32-8-8, is making 2168 barrels. Homaokla and New England No. 2 Carolina, is producing 3183 barrels daily. Dixie Oil Co. No. 1 Garner, in the NEc of 5-7-8, which extended the field a mile eastward last week, is making 1810 barrels.

Among recent lease purchases in the deep sand area at Wewoka, the Amerada Petroleum Corp. bought the north offset to the new Dixie Oil Co. No. 1 Garner, a 40-acre lease, for which it is reported to have paid $300,000, of which $200,000 was in cash and the remainder to be paid out in oil. The lease was bought from Bean, Rogers & Buchner, of Holdenville, Okla. In this vicinity, the Magnolia Petroleum Co. bought the E½NW of 4-7-8, a quarter-mile east of the Dixie extension well, paying $1,000 an acre for it. This company also is reported to have taken over a block of 400 acres in 26-8-7, two miles southwest of Wewoka, from W. R. Ramsey, of Oklahoma City. Consideration for this acreage was reported as $25,000 cash and $100,000 in oil, with well to be started at once in the NEc of the section.

New Shallow Pool Near Tulsa

Since Burton & Holmes completed a well making 625 barrels a day in the Red Fork sand from 1828 to 1887 feet in the NEc SW of No. 23-19-10, Tulsa county, seven locations in the vicinity have been announced, and a real "play" is developing in the neighborhood. The discovery well, known as No. 1 Stickler, is near the town of Fisher, about 10 miles west of Tulsa. It started off at 50 barrels of 39-gravity oil an hour after a shot and is now producing 625 barrels daily.

Completions in Oklahoma and Kansas, Week Ended May 1

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia	5	NEc NW 19-1-3W	3095–3100	40
Schermerhorn	2	C SW SE NW 34-1-3W	3217–3228	185
Roxana	1	C SW SW SE 6-2-2W	1712–1740	27
Roxana	3	C NE SE SE 7-2-2W	2460–2495	210
Roxana	4	C NE NE SE 7-2-2W	1673–1678	60
Carter	1	C NW SW SW 8-2-2W	2456–2503 OWD	115
Magnolia	1	C SE NE SE 16-2-2	1260–1278	30
S. W. Pet	8	SWc NE SE 16-4-2W	1886–1984	12
Amerada	25	NEc NW SE 20-5-1E	1545–1550	80

Comanche County

Company	Well No.	Location	Depth	Initial Prod.
Graham	1	SEc SW SW 12-7-10W	T.D. 200	Dry

Creek County

Company	Well No.	Location	Depth	Initial Prod.
Pure	1	NEc SE 12-18-8E	2332–2359	8M
Barnsdall	4	NEc NW SE 27-17-8	3109–3134	40
Gypsy	6	NWc SE SE 2-14-8	2472–2505	40
Tibbens	7	SEc NE SE 12-14-8	2370–2410	75
Prairie	6	C NW NW SW 22-17-9	T.D.2474	20
Magnolia	11	NEc SW NW 10-16-7	T.D.4125 OWD	Dry
Atlantic	2	SWc NE SE 29-16-8	T.D.3857	Dry
Gypsy	18	CSL N½ N½ NE 1-18-11	T.D.2240	Dry
Spears et al	1	SWc NE 5-16-12	T.D.2090	Dry
Phillips	1	SWc NW 7-14-9	T.D.3783	Dry
Empire	2	SEc NW NW 32-14-10	T.D.3505	Dry

Garfield County—Garber

Company	Well No.	Location	Depth	Initial Prod.
Sinclair	29	C SE NE NE 13-22-4W	T.D.2750	116
Sinclair	33	C SE NW NE 13-22-4	4305–4325	2192
Sinclair	36	C NE NW NE 13-22-4	4340–4358	200
Roxana	3	NWc SW SW 18-22-3W	3005–3025 OWD	2386
Roxana	15	NEc NW SW 18-22-3W	2468–2487 OWD	270
Roxana	5	NEc SW 18-22-3	2717–2719 OWD	4318
Roxana	25	NEc SW SW 18-22-3	2760–2821	90

Garvin County

Company	Well No.	Location	Depth	Initial Prod.
Tex-Pac	3	C NE SE SW 16-1-3W	1613–1325	12
Mid-Cont	2	NEc NW SE 17-1-3W	1636–1642	50

Grady County

Company	Well No.	Location	Depth	Initial Prod.
Skelly	3	NWc NE NW 23-5-8W	2085–2375	33M
American Drlg	6	NWc SW SW 23-5-8	2020–2500	35M
Carter	1	NEc SW SE 8-3-5W	2600–2621	150
Pauline et al	1	NEc 11-3-8W	T.D.3010	Dry
Clark et al	2	CWL E½ NE SW 35-3-5W	T.D.2104 OWD	Dry

Grant County

Company	Well No.	Location	Depth	Initial Prod.
Wilson et al	1	C SW SW SE 26-27-4W	T.D.4251	Dry

Hughes County

Company	Well No.	Location	Depth	Initial Prod.
Tidal Osage	1	C NW SE SW 3-9-11E	3015–3021 OWD	30
McCullough	1	C SE NE NW 12-7-9E	4015	Dry
Minnehoma	4	C SW SE NE 1-9-9	T.D.3063	Dry

Jefferson County

Company	Well No.	Location	Depth	Initial Prod.
Gypsy	16	CNL SW NE 33-6-5W	1422–1424 OWD	500
Brown	3	NEc NW 33-2-5W	T.D.1380	Dry
Staley-Wynn	1	SWc SE SW 2-7-6W	T.D.2257	Dry

Kay County—Blackwell

Company	Well No.	Location	Depth	Initial Prod.
Ark. Fuel	3	NWc SW SE 4-27-1W	3430–3441	265
Polling et al	1	SEc NE 5-27-1	3436–3442	125
Blackwell	5	SEc NE NE NE 9-27-1W	3418–3426	160
Black Gold	2	NWc 10-27-1	3423–3428	50
Ostot	1	C SW SW NE 7-27-1	T.D.4010	Dry

Kay County

Company	Well No.	Location	Depth	Initial Prod.
Blackwell	1	NWc 7-26-1W	T.D.2580	Dry
O'Haver et al	1	C SE NE NE 22-27-4E	T.D.3623	Dry

Lincoln County—Davenport

Company	Well No.	Location	Depth	Initial Prod.
Phillips	5	NWc SE SE 2-14-8	2472–2505	40
Willis et al	1	SWc NE 19-17-4E	T.D.4724	Dry

Marshall County

Company	Well No.	Location	Depth	Initial Prod.
United 8	4	NEc SE SE SE 24-5-5E	T.D.1530	Dry
United 8	3	SWc 19-5-6E	T.D. 910	Dry

Muskogee County

Company	Well No.	Location	Depth	Initial Prod.
Bradley et al	1	C S½ NW SW 5-14-19	717 –730	60

Noble County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia et al	2	C SW NW SW 15-21-2W	1894–1900	72

Okfuskee County

Company	Well No.	Location	Depth	Initial Prod.
Burns	7	NWc SW NW 7-12-11	2719–2732	35
Indep et al	10	C SE NW SE 13-12-11	2455–2515	40
Amerada	7	SEc NE SW 36-10-9	3298–3320	20
Josey	2	CEL NE SE 32-12-11	3648–3659	135
Indep et al	2	C NE SW NE 13-12-11	T.D.3377	Dry
Champlin	5	SWc 22-11-11	T.D.3093	Dry
Phillips	17	NEc SE NE 24-11-11	T.D.3435	Dry

Okmulgee County

Company	Well No.	Location	Depth	Initial Prod.
Noble	3	CWL NW SW 3-15-11	1911–1965	20
Sheridan	4	CSL SE NE 4-15-11	1971–1993	35
Hazlett et al	1	NEc NW 36-14-12	1217–1263	½M
Cosden	6	C NW NE 33-12-12	1438–1500	25
Pine	1	NWc SW 3-15-14	1495–1505	1M
Arksarben	9	CNL SW SE NE 1-14-14	590– 675	1M
Mechling et al	4	CNL NE NE 14-14-14	1101–1114	12
CalCul	3	CNL SE SW 15-13-14	2540–2454	40
Helena	4	SEc SW SW NW 16-13-15	2303–2315	10
Detrick et al	1	NEc SW 21-16-13	T.D.2197	Dry
G & M	1	NEc SW 18-14-12	T.D.2775	Dry
Fair	4	NWc NE NW SE 7-13-12	T.D.3025	Dry
Independent	2	CEL NE NW 18-12-12	T.D.3424	Dry
Independent	3	NEc SE NW 18-12-12	T.D.2581	Dry
Willmott et al	3	SWc SE SE 11-14-14	T.D.1143	Dry
Prairie	3	C SE SW NE 12-14-12	T.D.2674	Dry

Osage County—Burbank

Company	Well No.	Location	Depth	Initial Prod.
Sinclair	2	NEc SE SW 21-25-6	2716–2722	15
Phillips	2	NEc NW NE 28-25-6	2688–2712	27
Prairie	4	SW SE SE 21-25-6	2681–2714	480
Prairie	5	SW NE SE 21-25-6	2708–2741	80

Osage County

Company	Well No.	Location	Depth	Initial Prod.
Duffield et al	1	NWc 34-28-11	T.D. 996	10
Lewis	8	CWL E½ W½ NW 29-25-8E	2455–2477	152
Continental	4	SE NE SE 29-24-8	2606–2611	60
Barnsdall	6	SW NW 11-24-11	1623–1698	5
Sterling	6	SE SW SE 1-22-9	1885–1962	30
Branstetter et al	1	CWL E½ W½ SW 23-22-11	1454–1515	15
Winona	1	NWc SE NW SE 28-29-9	T.D.1998	Dry
Wah-Sha-She	2	SEc NW 33-28-11	T.D.1113	Dry
Cont. Prot	2	NWc NE 14-26-8E	T.D. 650	Dry
Kanupp et al	1	NE NW NE 20-26-12E	T.D.1381	Dry
McCune et al	5	SEc NE SW NW 15-24-8	T.D. 525	Dry
Owen Osage	363	SEc SW 33-24-12	T.D.1629	Dry
Owen Osage	364	SE SW SE 2-23-11	T.D.1642	Dry
Okla. Nat	709	CNL SE SW 11-21-10	T.D.1956	Dry
Grimes et al	1	SEc NE SE NE 4-20-11	T.D.1963	Dry

Pawnee County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia	3	NEc SW SW 8-20-6	3030–3070	50
Tidal	3	SEc SW 3-20-0	2809–2811 OWD	35
Grieves	2	SWc NE SW 31-21-8	2609–2619	75
Magnolia	1	SWc 27-23-3	T.D.4145	Dry
Adamson	?	CEL NE SE 31-21-8	T.D. 785	Dry
Prairie	1	C SW SW SE 10-20-5	T.D.3925	Dry

Payne County

Company	Well No.	Location	Depth	Initial Prod.
Magnolia	1	C NW SE SW 8-19-5E	3079–3100	115
Mulberry	3	NWc SW 5-17-4	3631–3715	12M

Seminole County—Wewoka

Company	Well No.	Location	Depth	Initial Prod.
Dixie	3	NEc NW SE 25-8-7E	3019–3022	3040
Magnolia	2	CWL NE NW NW 5-7-8E	4171–4175	4417
Magnolia	3	C SW NW NW 5-7-8	4161–4163	5132
Mid-Cont	2	SWc NW NW 17-9-8	3301–3330	25

Stephens County

Company	Well No.	Location	Depth	Initial Prod.
Carter	6	NEc NW 2-2-5W	1469–1498	200
Malernee et al	7	NEc NW SW 20-1-8W	2176–2188	30
Pace et al	1	SEc NE NW 11-2-8	2136–2144 OWD	10
Magnolia	2	NEc SW SW 12-2-8	1500–1515	5
Brannon et al	4	SWc NW NW NW 35-1-8W	T.D.1700	Dry
Garvin	1	NEc SE SE 26-3-5W	T.D.2072	Dry

Tulsa County

Company	Well No.	Location	Depth	Initial Prod.
Holmes et al	1	NWc NE NW 23-19-10	1832–1836	6M
B S & B	16	CWL NE NW 16-18-13	1455–1474	70
Green et al	1	NEc NW SW 16-17-14	T.D.2019	Dry

Wagoner County

Company	Well No.	Location	Depth	Initial Prod.
Lowe	2	NEc SE NW 7-17-15	T.D.1680	Dry
Mays	1	SWc SE 10-19-15	1046–1430	4
Pine	2	C SE SW 26-17-16	866– 873	50
Egolf et al	5	NWc SW NW 30-17-17	1322–1350	20

KANSAS

Butler County

Company	Well No.	Location	Depth	Initial Prod.
White Eagle	3	NEc SW 27-26-7	2135–2167	100
Tidal-Gt. So	33	NEc SW SW 16-26-8	2400–2517	100
Empire	2	SWc NE 27-27-7	2738–2761	250
Manhattan	4	SEc NE SE 28-27-7	2715–2752	150
Manhattan	5	NEc SE SE 28-27-7	2695–2735	400
Empire	16	NEc NW NW 36-27-4	T.D.2780	Dry
Manhattan	2	NWc SW NW NW 34-27-7	T.D.2820	Dry
Marland	1	SWc NW NE 9-28-7	T.D.3330	Dry
White Eagle	1	SWc 4-29-6	T.D.2915	Dry
Garden et al	1	NWc 23-29-6	T.D.3280	Dry

Cowley County

Company	Well No.	Location	Depth	Initial Prod.
Lewis	1	SWc NE 31-30-6E	T.D.2931	Dry
Roth-Faurot	2	NEc SW 20-31-5	1694–1696	4½M
Hull	15	CEL SE NW NE 24-32-4	2971–3046	75
Ark. Fuel	2	NWc NE NW 7-32-5	2333–2343 OWD	75

Cowley County—Rainbow Bend

Company	Well No.	Location	Depth	Initial Prod.
Wentz et al	2	CSL SE NE SE 17-33-3	3167–3184	150
Barnsdall-Marland	18	SEc NW NE NW 21-33-3	3203–3229	125
Rosenthal	1	C NW SE 14-34-4	2132–2144 OWD	6½M

Elk County

Company	Well No.	Location	Depth	Initial Prod.
Neeley	1	SEc SW 29-30-6	T.D.2176	Dry

Greenwood County

Company	Well No.	Location	Depth	Initial Prod.
Empire	5	NEc NW NW 6-22-10	2155–2172	100
Snydicate	2	NEc NW 12-22-10	2020–2098	500
Texas	5	NEc NW NE SW 29-22-10	2308–2353	75
Phillips	4	NEc SE SE 30-22-10	2472–2497	75
Pulaski et al	1	NEc SW 4-22-12	1839–1863	400
Empire	1	SEc NW 18-22-13	2175–2203	45
Empire	33	NEc SW 16-23-9	2479–2544	100
White Eagle	6	CNL SE NW SE 19-23-9	2564–2603	175
Pulaski	7	SWc SE NE 8-23-11	1860–1869	10
Haverhill	5	NEc 9-23-13	1570–1610	30
Abel et al	1	NEc NW 23-22-12	T.D.2310	Dry
Murphy et al	2	NWc 29-24-11	T.D.1837	Dry
McGinnis et al	5	NWc NE 30-23-11	T.D.2130	Dry
Miss. Valley	1	NWc SW 19-24-12	T.D.1912	Dry
Parkins et al	1	SEc NW 18-25-11	T.D.2014	Dry
Gillespie	1	SEc NE SE 23-27-9	T.D.2323	Dry

Lyon County

Company	Well No.	Location	Depth	Initial Prod.
Buck et al	1	NEc SE 36-19-11	T.D.2058	Dry
Troxell et al	1	NEc SW 12-20-10	T.D.2243	Dry
Sheedy et al	4	NEc SE SW 31-21-10	2243–2310	450

Osage County

Company	Well No.	Location	Depth	Initial Prod.
McMahon et al	1	C SE NW 32-18-14	T.D.1765	Dry

Russell County

Company	Well No.	Location	Depth	Initial Prod.
Skelly	4	SEc NE 18-12-15W	2959–2966	150

Sumner County

Company	Well No.	Location	Depth	Initial Prod.
Phillips	2	SEc NE SE 24-33-2	3211–3229	430
Marland	1	SWc NW 24-34-2	T.D.3465	Dry

THE CHIEF DRAWBACK ABOUT BEING GENEROUS IS THAT IT ATTRACTS SO MUCH ATTENTION

Workers May Collect From Unit Holders

By Special Correspondent

LOS ANGELES, May 3.—The legal department of the State Labor Commission, in a hearing at Long Beach a few days ago, handed down an opinion to the effect that unit-holders in oil wells are jointly responsible with land owners and lessors for unpaid wage claims filed by oil workers. This is the first time in the history of the oil business in California that the labor department has passed on the liability of unit-holders for unpaid wages.

It is asserted that the decision is statewide in its significance, and that it will probably apply to farm labor as well. According to unofficial reports more than $1,000,000 is due oil field workers as unpaid wages in connection with various drilling projects at Signal Hill during the last few years. It now appears that the workers can descend upon the unit-holders and collect their claims if the companies are unable to make good.

The hearing at which this opinion was rendered involved $4,000 worth of claims filed by 18 oil workers for services said to have been performed at Signal Hill for Felix C. Gillispie and Grace Broadway. They took a lease from Rose and Goldie Steiner and Sam Amsel, landowners, and assigned certain percentages of the lease and production. All parties holding royalty interests, the decision says, knew that the work was being done for their benefit, and are therefore liable. The decision says:

"When parties enter into an understanding to drill a well and to defray the expense thereof by selling interests therein so that they may eventually benefit by the production on whatever it may be, and while workmen perform labor to enable the realization of the purpose, there is a clear liability.

"Such relation constitutes a joint adventure, and all persons joining in the enterprise are jointly and severally liable for such labor and services."

The persons held liable in the case under discussion are to be given ten days in which to settle the claims, the commission says. Failure to comply with this requirement will add 25 per cent penalty and if the claims still remain unpaid, civil or criminal action will be instituted, the labor office asserts.

Kansas Jobbers to Discuss Discount

WICHITA, KAN., May 3.—The annual meeting of the Kansas Oil Jobbers Association will be held at the Lawson hotel here May 7, according to an announcement sent out this week to members.

Discussion of the new policy of the Standard of Indiana to allow a 1 cent per gallon discount on dumps of 50 gallons or more, is expected to be one of the features of the meeting.

LOUISVILLE, KY.—Stoll Oil Refining Co. has completed a bulk station at Lebanon, Ky.

Fifth Oil Electric Engine Being Delivered

CHICAGO, May 3.—The fifth oil electric engine to be placed in commercial use is being delivered to the Chicago & Northwestern railroad, and goes into switching service in the Chicago yards. This is the second of this new type of locomotive this railroad has ordered Three others are in use in the east, one by the New Jersey Central, in the Bronx terminal, one by the Long Island division of the Pennsylvania and one by the Baltimore & Ohio

These oil electric locomotives, which use a gas oil-driven, Diesel type engine to generate electric current to run the locomotive, are now limited to switching service on the railroads because the Ingersoll Rand Co., which developed the engine in conjunction with the General Electric Co. and the American Locomotive Works, has not succeeded thus far in developing sufficient horsepower to operate locomotives on long hauls. About 600 horsepower is developed in the engines now being made, while from 1000 to 1500 is needed on long hauls. The company's engineers are now at work developing a type with more horsepower.

Ingersoll Rand officials say they have 500 letters from railroad officials expressing belief in future development of this type of engine. This latest engine to go to the Chicago railroad was halted at several towns and cities along the route from Schenectady to Chicago in order that the public might see it.

The Editor's Viewpoint

National Petroleum News

Possible Market Effect of Cracking

CRACKING is creeping up on the price of gasoline most insiduously. Everyone is striving for greater efficiency in cracking. More plants are being installed every week. Cracking is hailed as the salvation of the industry and the public **B U T—**

Difficult as it may be to do, the industry must plan as much as it can against this encroachment of cracked gasoline. It is a highly desirable product, but it may cause the industry some serious price troubles at times if great care is not taken.

Gasoline prices have been soft for some years, soft to poor. This is partly due to too much crude but also to steadily increasing refinery efficiency and improvement in cracking. Such improvement will continue, hence output planned on yesterday's figures may prove too much for the market.

Cracked gasoline at the end of this year will amount to 300,000 barrels a day, or about 45 per cent of the total 1925 production, a bit lower percentage of the probable production for this year, is the estimate of Charles L. Parmelee, consulting engineer to the petroleum industry, in a recent address. Last year, he said, cracked gasoline amounted to 30 per cent of the total gasoline output. In other words, there will be more than a third increase in the percentage of cracked gasoline to total output.

All this suggests to the refiner—and the oil producer as well— that he discount materially any figures based on last year which he is using to plan his output for this year, as against the total output from other plants. Better to err on the side of conservatism than to have more gasoline than the market will absorb. The day is not far distant when the highly improved refining industry of this country will be able to manufacture gasoline currently for current demands.

Prices are made by the amount of material on the market and how much the buyer wants of it, not on any cost plus basis. A wholesome respect for the tremendously increased efficiencies of oil refining is the best policy today. The refiners of this country really don't know how efficient they are.—W. C. P.

Lubrication of the Future

THE mechanics of automobile lubrication may be radically changed within the next few years, J. L. Murray, automotive lubrication authority with the National Petroleum Marketers Association, told Minnesota jobbers at their recent meeting in Minneapolis, thereby giving the oil marketer another future contingency to puzzle over. He believes the job of greasing the car will be simplified through the oil plunger system or some other development and that the use of filters and rectifiers will add to the life of the motor oil in the crankcase.

Such changes are coming, undoubtedly. As far as the automobile manufacturers are concerned, improved lubrication has not received the attention of other points in motor car operation. What has been done has largely been by specialty manufacturers. How any changes and improvements will affect oil and grease sales and the service station business of the oil company remains to be seen. However, there is this to be said on the other side of the question. The tendency of the public is growing in the direction of having its cars serviced, rather than to do the job itself. More and more car owners have given up the work of greasing the car themselves and take it to a garage or service station. Less and less washing of cars is being done in the driveway or garage at home, and more and more of this work the car owner is having done for him. The same with going over the car for loose nuts and bolts and connections, and minor repairs.

For one thing, most everyone is on his third or fourth car or better, and there is no novelty or fun in fussing with the car himself. More convenient facilities are offered for having the work done and there are more demands on a man's time, whether they are business, social or recreational. The net result is that the routine chores are done by someone else and paid for.

Many oil companies operating stations have already taken advantage of this trend to help their own business. They hold their trade largely through service—not free service—but quick service, convenient service, done by employes with that air of confidence that comes from knowing what one is about. What changes come, the automobile is going to be a consumer of gasoline, oil and grease. The owners will turn to the oil companies if their service is the best that is offered.—V. B. G.

Is It Really the Farmers' Idea?

THE extent to which government will play with business in the next quarter century probably will depend largely on the solution Congress devises for the alleged troubles of the farmer. If Congress adopts any of the present suggestions originating with farmers (so-called) it is certain government will be in business up to its neck in a few years.

The farmers—and one can't believe they are really farmers—in a spirit of narrow selfishness, say that any scheme that is worked out whereby the government puts up a pot of money and a commission in charge to buy and sell farm products so as to manipulate the prices up, they will oppose being extended to any other industry. However, one can't count on the farmer's selfishness being successful. Others would, undoubtedly, seek the same privilege and the same or larger size pots of money. We might even hear the suggestion from the oil industry.

The Cleveland Plain Dealer, in editorially condemning government price fixing says, "once the principle is established it will be extended" and names oil as one of the possible beneficiaries(?). The farmer might even be the one to invoke such governmental aid for oil, because a few cents less in the price of crude oil today means millions of dollars less royalty to farmers in the seventeen oil states.

Government can and should help industry with statistics and the means of interpreting them but price fixing even for the poor (?) farmer should be condemned.—W. C. P.

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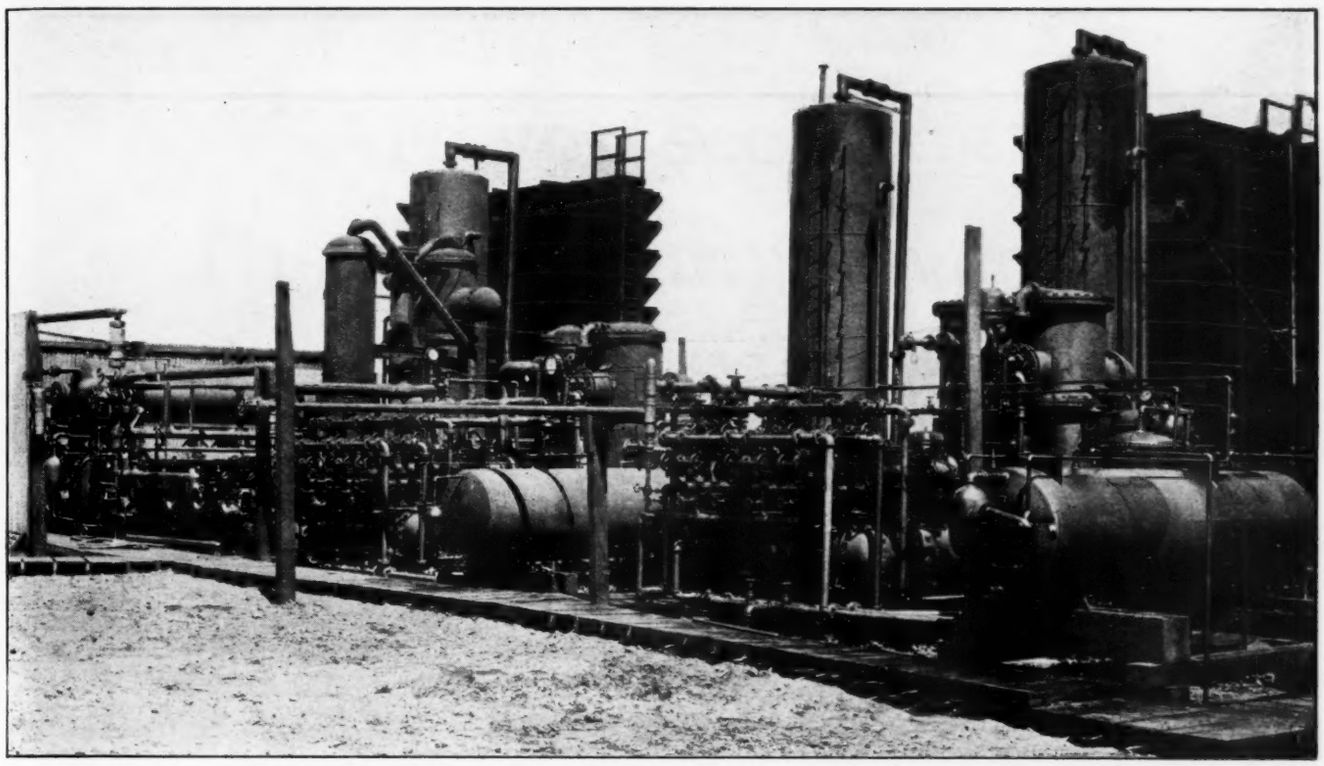

Fig. 1. Three Braun Portable Gasoline Plants installed by the Amerada Petroleum Corp. in the Deep Rock field near Mehan, Payne county, Okla.

Nearly Fifty Portable Gasoline Plants Producing 172,000 Gallons Per Day

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, May 3

ONE of the most outstandng developments in the natural gasoline industry during the past year has been the growth of the portable plant idea. As far as the Mid-Continent field is concerned the growth of portable installations has taken place almost entirely within the past six months. In California portables have been used in small numbers for nearly two years.

About the middle of June last year the Skelly Oil Co. drilled in a wildcat well near Stroud which began making 1,000,000 cubic feet of wet gas with the oil. The company moved a tail gas charcoal plant from its Burbank properties, set it up and began making gasoline within 30 days after the well was brought in. The plant began making about 2500 gallons of gasoline per day and the cost of moving it to its new location was paid out in about eight days.

This installation by Skelly created a great deal of interest among gasoline manufacturers who had found it impossible in the past to get a gasoline plant in operation within 90 days after drilling in a well, even under the most favorable conditions.

THE next installation in the Mid-Continent field was made by the Comar Gasoline Co. (Roxana-Marland) on its Braman townsite properties. Two Southwestern portables were installed during the early part of September and kept in operation until the latter part of November when they were moved on to the Garber field. Comar had had time to erect a permanent plant at Braman meanwhile and flush gas had developed from the Garber deep sands. At Garber the portable plants were used to supplement the permanent plant which was already in operation At one time there were five portables on Roxana Petroleum Corp's. Shroeder lease in addition to the permanent plant.

At the International Petroleum Exposition at Tulsa in October, C. F. Braun & Co., exhibited its first portable gasoline plant and a similar exhibit was at the booth of the Southwestern Engineering Corp. Both booths were visited by gasoline men from all parts of the Mid-Continent and installations during the past six months have increased by leaps and bounds.

Since that time the Gasoline Recovery Corp., owners of the charcoal process have designed a portable plant which differs from the Skelly plants in a number of particulars.

The Newton Process Co. has just announced a new portable plant and it is understood that other manufacturers will have portables to offer within the next few months in an effort to keep pace with the demand.

Demand Exceeds Supply

THUS far natural gasoline manufacturers have been buying the plants faster than they could be produced. Every manufacturer is behind with orders. Not very far behind, however, for the natural gasoline men demand shipment at once and if it cannot be gotten they go to another equipment company with the order.

The Tulsa branch of the Braun company has been trying to get a plant in stock for the past two months. Salesmen wanted to have a plant in the warehouse that they could show prospects

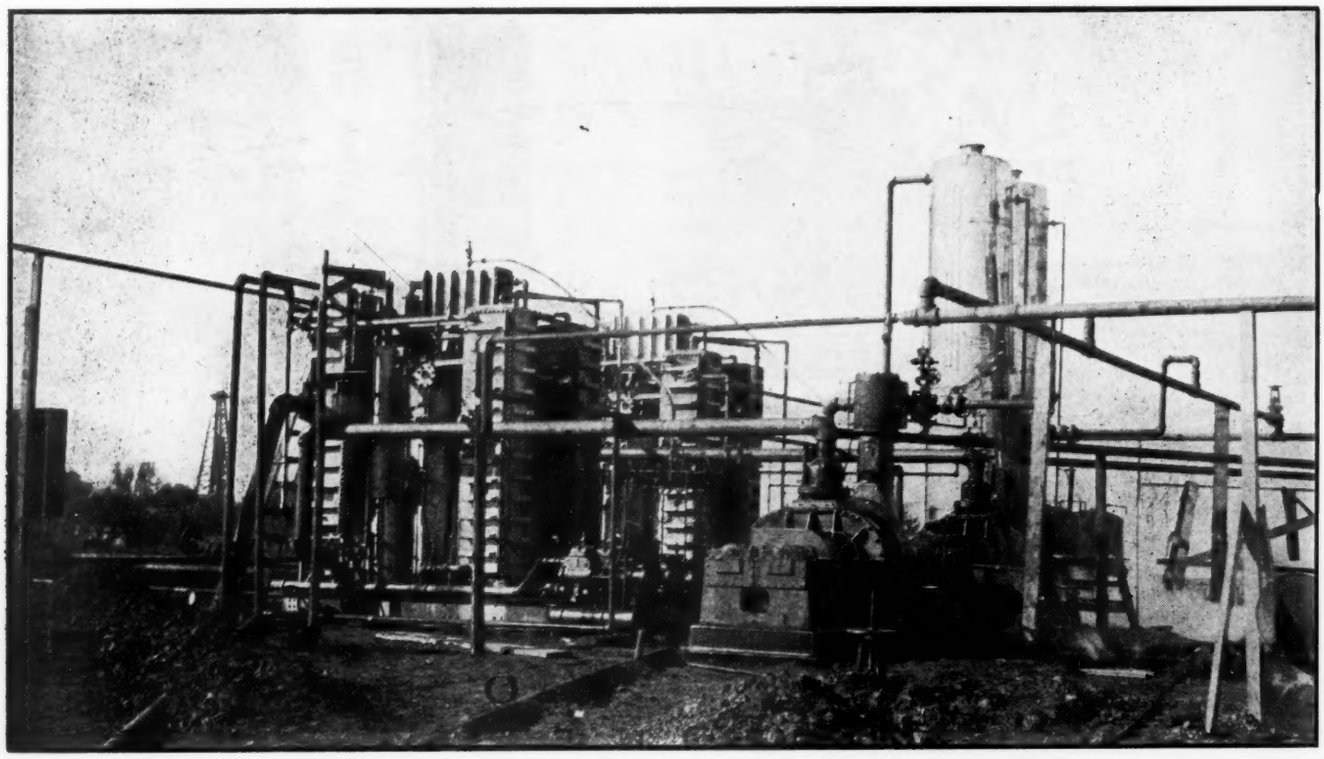

Fig. 2. The first two Oil Portables installed in Oklahoma. Southwestern plants in the Braman field, installed by the Comar Gasoline Co.

and be able to promise immediate delivery. Thus far it has been impossible to get one on the floor. Last week they almost made the grade.

A plant was shipped from the factory and got as far as the warehouse door. The car was not unloaded, however, a purchaser took it away.

Southwestern men in Oklahoma recently booked orders for six plants in a single week. When the sixth was sold it was necessary to declare a holiday until the factory could catch up.

The rapid installation of portables can best be shown by reciting the number now in service. At the time this was written there were 23 Southwestern plants in the Mid-Continent field as compared with 2 last September, an increase of 21 in seven months. In California there are 18 Southwestern portables in service.

There are now 16 Braun portables in service in the Mid-Continent field. Early last fall the Braun company built 5 plants and put them in service for testing out the design. After checking their operations over a period it was found that the plant could be made much lighter and a new design was worked out. The first of the new plants was brought out early in February and production has continued at the rate of one per week since that time. In the past 9 weeks 11 Braun portables have been put in service.

The Gasoline Recovery Corp. recently designed a portable charcoal plant and the Texas Co. is using the first in the Davenport field. At the present time there are 4 of these charcoal plants in service.

As mentioned above Skelly Oil Co. has designed its own charcoal portables, one group of which was described in the March 17 issue of National Petroleum News. Skelly now has 4 portables in operation in Oklahoma and one in Texas.

A year ago there were no portable plants in the Mid-Continent and now there are found to be 49. Of this number 9 are charcoal plants and 38 oil absorption plants.

As a general rule the portable plants are designed to produce about 2000 gallons of natural gasoline per day. Oil rates are based on that production on an efficient basis. In practice, however, the plants are generally overloaded. Roxana Petroleum Corp. has produced in excess of 8000 gallons per day from a 2000 gallon plant.

It is conservatively estimated that all the plants now in service in the Mid-Continent field are producing an average of from 3500 to 4000 gallons of natural gasoline per day. On the basis of the lower figure the daily production of natural gasoline from portable plants in the Mid-Continent field is now 172,000 gallons per day.

The February report of the U. S. Bureau of Mines shows a production of 36,700,000 gallons of natural gasoline in Oklahoma and Kansas, a daily average of 1,310,000 gallons. The estimated production of portable plants is thus 12.8 per cent of the total production in the two states. On the basis of these figures it is shown that the portable gasoline plant has achieved a place of economic importance in the industry in the few short months since it entered the field.

Some producers who manufacture natural gasoline as well have adopted a policy of buying one or more portable plants for warehousing. With a plant or two in stock it would be possible to begin making gasoline much sooner than if the operator waited until he got a supply of gas from a new well before ordering a plant.

In the California fields some operators have adopted the plan of not building large permanent gasoline plants in line with general practise. Instead, the manufacturers have bought a series of portables and lined them up in a row to make a large plant. By following this

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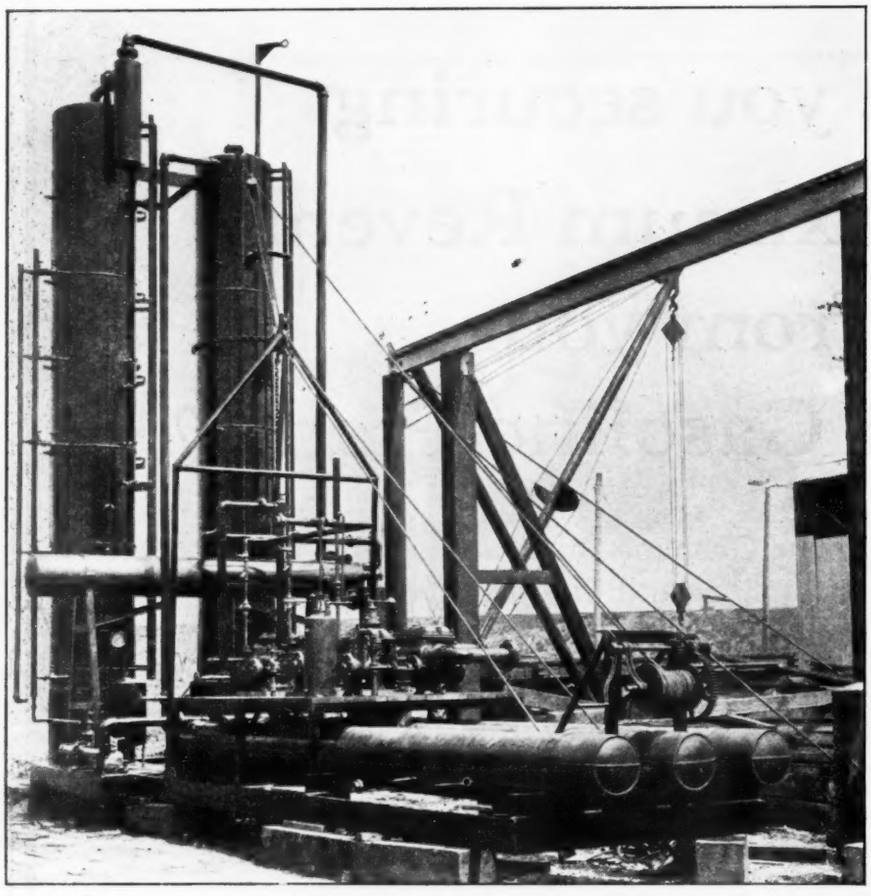


Fig. 3. Newton Process Manufacturing Co. portable gasoline plant assembled at factory prior to shipment. This plant is now in operation in Oklahoma.

practice the manufacturer figures that he can regulate the size of his plant in line with the volume of gas available without great expense.

In the normal large absorption plant there is a multiple series of compressors but the absorbing and distilling equipment is made large enough to handle the entire plant. The Petroleum Securities Co. in the Los Angeles basin has six absorbers and six separate portable distillation pump units hooked up to make a single plant.

The accompanying photographs of oil absorption portables in Oklahoma fields show from two to three portables working side by side.

The first Newton portable plant was installed near Mehan in the Deep Rock field on April 26 and is now in operatoin for the Hurley Gasoline Co. The plant is designed to handle normally 10,000,000 cubic feet of gas per day and has a normal still capacity of 4000 gallons of natural gasoline.

Fig. 3 is a photograph of the first Newton plant set up at the factory prior to shipment to the field. The absorber, stil land dephlegmator are attached to the section of the steel frame at the rear of the view while pumps and exchangers are on the section in the foreground. Absorbers and still are hinged to the frame so that they may be transported to location in a horizontal position and swung up into position with the winch shown in the view.

Employees Present Hurley Brothers With Cup When Plants are Sold

Staff Special

TULSA, May 3.—The petroleum industry probably has less difficulty with its employees than any other major industry in the United States. But even in the oil business the relationship between employees of the Hurley Gasoline Co. and the four Hurley brothers appears to have been an ideal one.

It will be remembered that the Hurley Gasoline Co. recently sold its Texas plants at Breckenridge to the Chestnut & Smith Corp. When the deal was consummated the Hurley brothers gave employees a bonus out of the proceeds of the sale.

The employees at the plants banded together and sent their former employers a silver loving cup. Accompanying the cup was a letter signed by "The Bunch" expressing regards of the men for the company's officers and of E. C. Hughes, superintendent. Following is the letter which is a document which is highly prized by owners of the company:

"It is with sincere regret on the part of the employees, that business relations with the company were ended with the recent sale of the Hurley-Texas and Hur-Bar Gasoline plants, but there remains and will remain for a long time to come, many kind and pleasant memories of their association with this company.

"But it has been more than a mere business relation. Their tenure of employment with you has brought with it, friendships and personal contacts whose value cannot be measured in dollars and cents and in this day of modern business when indifferent and even strained relations between employer and employed only too often exist, it is gratifying that this particular group of employees can look back with only thoughts of friendliness and good will to the company with which they have been identified these last few years.

"The company's gift of a bonus at the close, for which our collective thanks are now gratefully rendered, is only an added proof of the fairness and consideration which they had long since come to know and appreciate. It is needless to say that the men of these plants wish abundant success to the Hurley Gasoline Co. in all its future operations.

"We feel that mention of this most unusual and desirable condition which has existed would be incomplete without recounting the part played by Mr. E. C. Hughes, superintendent. Around his influence and example has this condition been largely built and to him perhaps, more than any other one factor is due whatever measure of satisfaction and success that it has brought to both company and employees."

The four Hurleys comprising the company are Arthur E. Hurley, president; C. E. Hurley, secretary-treasurer; J. W. Hurley, vice president and general manager; and Daniel A. Hurley, director. All of the brothers live in Tulsa except A. E. Hurley, who makes his residence in Los Angeles. His interests there include the Hurley-Smith Co. and the LaHabra Gasoline Co. These two companies have seven gasoline plants in California.

Depreciation and Depletion For Gas Plants; What Amortization Really Is

By A. B. Morris
Appraisal Engineer, Chestnut & Smith Corp.

Delivered before Association of Natural Gasoline Manufacturers, May 5

FOR many people the ideas embodied in the words depreciation and depletion are somewhat shrouded in mystery, due to some extent no doubt, to the weighty sound of the words themselves, which has discouraged a closer examination into what they mean.

There is another formidable word related to these two much as the surname of two brothers is related to the given name of each, and that is amortization. Strictly speaking, amortization is the general term, and depreciation and depletion are specific kinds of amortization. Unfortunately for clearness, custom has attached certain specific meanings to the word amortization, so that for many its generic nature is lost, and it has come to be regarded as something basically different from the other two specifics.

A brief discusson of the relationship of these three words—amortization, depreciation and depletion, will help to a better understanding of this topic. When money is put into a profit seeking enterprise, it is generally impossible to recover anything like the amount expended except through two courses:

1—Sale of the venture to another operator, or

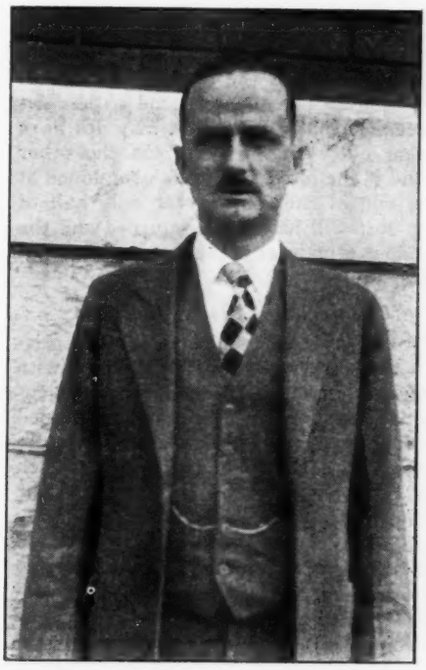
2—Operation of the property and recovery of cost out of operating profits.

Operation Must Pay Cost

IN the first case we have a mere change of ownership, and the new owner then stands in the shoes of the original one and like him is under the necessity of recovering his capital outlay in either of the same two ways. Ultimately someone will have to resort to course No. 2 to recover the cost if it is to be recovered at all.

Everyone knows what "Operating Profit" is. This term designates the margin between sales or other income from operation, and the cost, other than capital outlay, necessary to produce the income. If these profits are all paid out in dividends or otherwise withdrawn from the business and the time arrives when, for one reason or another, the abandonment of the venture becomes necessary, there will remain nothing out of which to pay back the investors except the junk value of the property.

They will have put their money into the business and derived dividends therefrom which have eaten up their capital. They had a right to assume that the dividends represented true profits, whereas each payment included not only true profits, if any, but also a portion of their original investment. The company has lived upon its substance, and is in exactly the same position, economically, as a legatee who cuts into the principal of his estate for his current living expenses. The company has been thriftless.



A. B. Morris
Appraisal Engineer, Chestnut & Smith Corp.

THERE is probably no business for which it is more difficult to work out a true accounting system than in the natural gasoline industry. In an industry so new, it is natural that in many cases, proper engineering and accounting methods have not been worked out in all companies for estimating the probable length of time it would take for a plant to pay back the money invested in it and the life of the gas supply upon which this repayment of the investment depends.

A good many natural gasoline plants, as everybody knows, have been built on faulty estimates of the gas supply to be expected and other vital factors and some of those plants have had to be junked or moved at great loss to the investors. We believe Mr. Morris makes a valuable contribution to the natural gasoline industry in setting forth the methods of figuring depreciation and depletion that have been worked out on the basis of sound engineering and accounting practice.—EDITOR.

Plant Cost Is Large

IN mercantile enterprises the value of the plant is small in proportion to the income expected and the total volume of business transacted and in addition is generally readily salvageable at nearly original cost; but in manufacturing and exploitation enterprises the plant cost is very large and the plant itself is of such a nature as to be salvageable only at a very large discount regardless of its actual condition.

In both mercantile and manufacturing enterprises the continuation of profits is very closely related to the individual efforts of those concerned; but in exploitation enterprises, the continuation of profits is primarily dependent upon the length of life of the resource being exploited.

The natural gasoline industry is both a manufacturing and exploiting industry and is subject not alone to the laws of either one, but to the laws governing both classes of endeavor.

It is apparent, then, that from mercantile and manufacturing undertakings the return of capital outlay may be spread over any reasonable period of time governed generally by the useful life of the equipment, since the assumption is warranted that the efforts of those concerned and hence the life of the business will be sustained beyond that period, indefinitely. Where the life of the business is limited by the supply of raw material, however, it becomes necessary to assure the complete return of capital prior to the exhaustion of the supply.

What Amortization Means

AMORTIZATION, an accounting process, is the means by which this savings out of operating profits is accomplished. The portion of the amortization deductions held out of operating profits to return the cost of physical equipment is called depreciation; that portion which is held out to return the cost of securing the necessary supply of raw material is called depletion. If money has been borrowed to start the business and sinking fund payments are also deducted to retire or amortize this debt, such deductions are known as

—Photo by J. L. Rivkin

J. W. Hurley

General Manager, Hurley Gasoline Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

amortization, in this case used specifically. There are other specific meanings for amortization, which will not be touched upon here.

Strictly speaking these terms are accounting terms used in abbreviation of the more complete "deduction for depreciation" and "deduction for depletion." The actual depreciation takes place not on the books but in the physical property itself through wear and tear, obsolescence, or market changes in equipment prices; and the actual depletion takes place in the supply of raw material as it is withdrawn for use, or depleted.

Bearing in mind the sole purpose of making these deductions from operating profits before computing true profits—these sinking fund payments to retire the original cost prior to the abandonment of the venture—let us consider the various ways in which this is actually accomplished in practice, by gasoline manufactures.

Depreciation

THE simplest method and the one most generally in use is the so called "straight line" method. This consists of adopting some percentage rate, chosen more or less arbitrarily and applying this to the investment figure each year, the product of the two being the amount to be deducted to provide for the retirement of capital cost of equipment.

Thus, if it is assumed that eight years is as long as the gas supply can safely be expected to last, 12½ per cent of the original cost of equipment saved each year will retire the total at the end of that time. If the operations extend beyond that point, and the rate has been maintained at 12½ per cent throughout, the point is reached at the end of the eighth year when these savings—this thrift pile, the depreciation reserve, as it is called—will equal the total investment, provided of course, that there have been no additions to plant in the meantime.

Thereafter, it being unnecessary to save anything further from current earning on this account, deductions for depreciation cease, or become limited only to the return of the cost of subsequent additions. The plant is said to be "depreciated out." It may or may not have "paid out" long before. On the other hand if the plant has to be abandoned at the end of the fourth year only half of the cost will have been returned and the balance remain as an almost valueless asset.

Depreciation Rate Uncertain

THE ease with which such a depreciation reserve is handled, coupled with the fact that this method prevails generally in all other businesses, have led accountants generally to prefer it under nearly all conditions. In a business such as this, however, the choosing of the proper rate of depreciation is so highly problematical, so much open to question on theoretical grounds, and so likely to prove incorrect, once having been decided upon, that some operators are now turning toward another method of saving up their plant cost out of earnings, where the amount saved each year will bear a direct relation both to the volume of business done and to the remaining supply of raw material upon the existence of which the continued operation of their plant depends.

This consists of making an estimate from all available data, of the ultimate production of the plant, that is, the total number of gallons of gasoline which it is believed will be made before such time as operating profits shall cease to exist. Enough information can be had to make a reasonably accurate estimate of this kind for all except entirely new fields.

Such an estimate should be computed by leases or other readily identifiable groups, and after a year or two of operation, can be adjusted up or down as may be indicated by the additional data thus provided. The total of these estimates is then divided into the total investment account—or the total less an estimated salvage value not to exceed 20 per cent—and the quotient, called the unit of depreciation applied to each gallon of gasoline as it is produced. If depreciation is computed monthly, the monthly deductions can be computed on a continuous sheet or table, which will show any changes in the investment account and in the estimate of ultimate production. If the depreciation is computed only at the end of the year, the depreciation unit is applied to the full year's production.

THE advantages in this method, in my mind, outweigh the objection of the additional labor of estimating and revising reserves. Besides affording a distribution over the entire life of the project of all plant cost, and assuring the return of the full cost prior to abandonment, this method keeps the management at all times aware of the conditions of the gas supply, whether it is in danger of early dissipation, or adequate to maintain production at approximately present levels for a considerable period. The estimate of production will show at what rate new gas will have to be contracted for in order to maintain capacity operation; and indicates a considerable time in advance, when and where such efforts will have to be exerted.

For large concerns such estimates should be prepared entirely independently of their use for depreciation or depletion purposes. After they are once started, keeping them up to date requires but little labor. The small concern having but one or two plants, where no engineering staff is maintained, can have these made by outside engineers at relatively small cost, and can have them revised once each year, which would be often enough.

(Continued on Page 68)

—Photo by J. L. Rivkin

A. J. Schlosser

General Superintendent, Gasoline Department. Barnsdall Oil Co., director of the Association of Natural Gasoline Manufacturers, Tulsa.

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(Continued from page 64)

Regardless of the method of computing depreciation, what items of plant cost should enter into the computation? What part of the original investment in plant is it necessary to save up to pay for? A finished plant consists of machinery, building material, pipe, masonry and labor. Labor includes ditching for pipe lines and all teaming costs and masonry includes concrete foundations and pits. When the gas supply is exhausted and it becomes necessary to abandon the plant what can be salvaged?

Machinery, pipe and building materials are all that have any value at all. The labor of erecting and installing is lost, and except for that part of it which went into concrete work, will very nearly have to be duplicated in order to dismantle the plant. Masonry is worthless. Second hand building materials have a value not much in excess of 20 per cent of cost of new; and machinery and pipe have a value largely dependent upon their condition and the state of the second hand market at the place and time of reclaim. The saving for depreciation must therefore cover the following items:

Not less than 60 per cent of pipe cost
Not less than 70 per cent of machinery
Not less than 80 per cent of building materials
Not less than 100 per cent of masonry
Not less than 170 per cent of all labor and teaming.

Or if the plant were built on a contract, or purchased in operation, so that the above distribution could not be made, not less than 80 per cent of the entire cost of the plant. These ratios, when applied to the investment figures for five plants, closely approximate 80 per cent of the total cost of the plants. However, I have seen no actual figures to support this 20 per cent net salvage value.

O. H. Schoenwald

Manager, Gasoline Department, Wentz Oil Corp., Ponca City, Okla., director of the Association of Natural Gasoline Manufacturers.

An Actual Example

AN interesting example of the handling of depreciation is the following, related by a member of this association. The company had three plants in the same pool. They use the unit basic for computing depreciation, and accordingly estimated the gas reserves in each of the several leases connected to these plants. It became advisable to abandon plant No. 1.

Some of the gas formerly going into this plant was turned into each of the other two plants, No. 2 and No. 3. Plant No. 1 investment was credited with depreciation already written off and with material salvaged at condition prices, which followed the items to their new locations and was charged with the cost of dismantling.

The balance was divided between Plants No. 2 and No. 3 in the same proportion as the estimates of gas formerly going to Plant No. 1 but now turned into each of the other plants. Thus if the estimate of gas reserves were 500,000,000 M. cu. ft. and Plant No. 2 took over leases representing 300,000,000 M. cu. ft., Plant No. 3 taking the balance, the balance of Plant No. 1 investment after making the credits noted above was split, 3/5 of it being charged to Plant No. 2 and 2/5 to Plant No. 3; thus, both the gas reserves and the investment at each of these plants were increased. It may be objected that this method unduly penalizes the surviving plants; but this appears to me to be rather short sighted. The company did go into that field and did make certain investments in plants to get the gasoline out of the leases contracted for. It appeared convenient to construct their plant in three large units, one of which later could be done away with. There is no less reason for insisting upon the separate handling of depreciation or the several compressor units at any one plant.

Depletion

THE oil industry was made familiar with this term through the operation of the income tax. As applied to producing oil properties there is little misunderstanding of it. It is simply the means whereby return of cost (or value) of oil in the ground is secured free from tax as income, because it is not income at all but return of capital.

Gasoline manufacturers gained some benefit from depletion of the value of their "gas contracts" paid for in stock or acquired as a gift of the stockholders; and in some few instances depletion on actual cash cost of gas supply came to light. Changes in the income tax law have robbed the tax angle of the subject of its general interest; so instead of considering depletion in its relation to tax matters I will discuss its uses for general accounting and operating purposes.

—Photo by J. L. Rivkin

Emby Kaye

General Superintendent, Gasoline Department, Skelly Oil Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

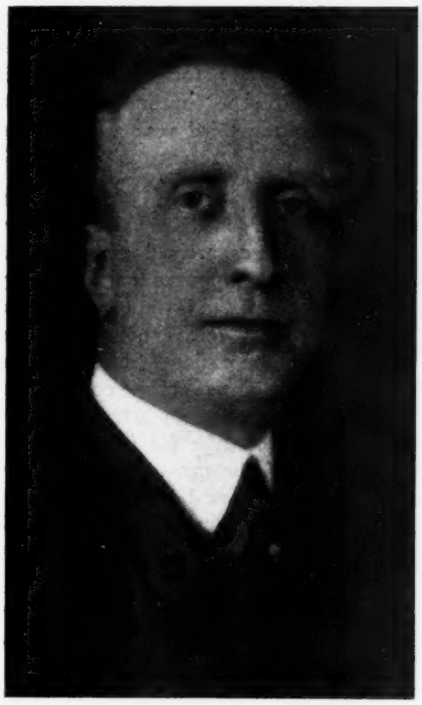
It frequently happens that a plant is purchased after having been in operation for a considerable period, and all the gas purchase contracts are assigned to the purchaser. The total consideration is often much in excess of the cost to replace the plant with one of like kind and condition; so that deductions for depreciation as defined above would be inadequate to retire the total cost.

The excess, or bonus cost of the plant and contracts, is properly chargeable all to contracts, and the retirement of this cost is called depletion.

The savings made on this account are to provide for the return of cost of gas supply that is being depleted in the same manner that savings on account of physical equipment are to provide for the return of cost of equipment which will be of small value when the venture is abandoned.

Bonus Retired With Equipment Value

IN practice there is seldom any distinction made between depletion of this kind and depreciation. That is, the bonus cost if any, is retired through one account along with the value of the physical equipment. There is no serious objection to handling return of cost in this way; but some advantages develop



—Photo by J. L. Rivkin

John M. Hall

General Manager, Oil State Gasoline Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

from keeping the two separate and distinct.

For example, I have found in appraising many plant properties, both for tax purposes and for economic purposes, within the government service and outside it, that where a unit capital cost of gasoline in the ground, much in excess of 1/10 of the market price of gasoline at the loading rack is used, true profits tend to disappear, or are at best very uncertain. Thus for a gasoline market ranging between 10 and 15 cents per gallon, the maximum cost for reserves consistent with profitable operation is about 1-¼ cents per gallon.

If physical value and bonus cost are lumped together in computing deductions to provide for return of cost, there is no way in which to tell whether or not the amount paid for gasoline in the well exceeds this limit or not.

With the two carried separately, and an estimated gallonage reserve set up for computing the true deductions for depletion, it is at once apparent whether or not these limits are being exceeded; and if they are, efforts can be directed to securing additional gas contracts until the increased reserves of gasoline result in a sufficient reduction of the unit cost per gallon. If such an estimate is made prior to the purchase, many a costly mistake can be avoided.

Relation to Earning Power and Value

This brings us to realation of amortization reserves to earning power and value of the project as a profit making enterprise. The cost per gallon of production for depreciation or other amortization charges as shown in the operating statements of any plant has no bearing on the value of the plant to a prospective purchaser, and should be eliminated from all computations of such value. This does not mean, by any means, that the item of amortization should be neglected in arriving at a proper purchase price. On the contrary, unless return of capital is taken into account in setting a bid price for a plant, a price far in excess of the actual value as based on earning power will be paid without proper compensation. It may be necessary for tactical or strategic reasons, to pay an excessive price for some one particular property, but the buyer should at least be in the position of knowing what his plant is worth per se, and how much he is paying for the tactical advantage sought.

There are two ways in which the value of a plant based on earning power can be determined, one which can be called the "present worth" method; and the other which can be called the "pay out statement" method. Both these depend primarily upon an estimate of the future annual production of the plant, and will be accurate only to the extent that such estimate is accurate.

It is possible to estimate the next year's production within very narrow limits; the second year's production, is subject to wider error, and thereafter the estimate for each succeeding year is liable to be more and more inaccurate.

Hence, that method of valuation which requires the fewest number of estimates of annual production will yield results which will correspond most closely to actual performance. For this reason I prefer the pay out statement method of plant valuation to the present worth method, since in it the estimates for only the succeeding three or four years are included, whereas in the present worth method annual estimates clear down to the probable date of abandonment become necessary. Moreover, in the pay-out statement method, return of capital is automatically provided for, but in the present worth method it is a very involved function of the projected purchase price.

The effect of amortization of capital cost—whether depreciation or depletion—upon the value of an operating gasoline plant will be seen from the following exposition of the two methods of computing value.

Present Worth Method

AFTER preparing the estimate of future annual production of the plant a selling price per gallon must be chosen which it is believed will be safely within the average for the remainder of plant life. From this average future selling price and the estimated annual production, the estimated annual gross sales are computed.

Plant operating costs by years can be estimated either by taking the present cost per gallon as a unit, or by estimating the cost for each year in a lump.

The estimated gross profits for operation in each year are the differences between these two figures. The sum of these differences for the estimated number of years of plant operation is the total gross operating profit of the plant. But these profits are received, not in a lump sum immediately, but in annual installments spread over a period of years. They are therefore not now worth par. A compound discount factor of 10 per cent for the present worth of these annual installments is generally used. Each installment is therefore discounted by its proper factor, and the sum of these products is the present worth at 10 per cent of the gross operating profits. But these figures do not include depreciation or depletion. For simplicity, this is generally provided for by deducting from the last sum above mentioned, the appraisal value of the plant equipment or reproduction cost now less actual physical depreciation, leaving a balance which is said to be the value of the earnings of the plant.

In reality I believe that this figure is a combination of the value of the net earnings plus the bonus value of the gasoline in the ground, since annual earnings of only 10 per cent on cost are not sufficient to induce capital to flow into

George P. Bunn

Assistant Superintendent, Gasoline Department, Phillips Petroleum Co., Bartlesville, Okla., who presented the committee report at the annual convention of the Association of Natural Gasoline Manufacturers at Tulsa on May 5 and 6, 1926.

—Photo by J. L. Rivkin

B. A. Whitney

General Superintendent, Gasoline Department, Transcontinental Oil Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

this business. If a higher discount rate than 10 per cent is used, say 15 or 20 per cent or some rate which may be considered adequate and attract capital, the present worth value of the gross profits shrinks so rapidly that they soon equal the appraisal value of the plant, at which point all bonus value disappears.

Such Valuation Much Involved

DUE to the operation of the compound discount all the factors of such a valuation are so involved as to have their relation, each to each, obscured, and the relatively large number of years which have to be included in the estimates of both annual production and future average selling price tend to rob the appraisal of its value. A further objection is the necessity which exists of choosing a discount rate, which must be done altogether arbitrarily. This makes the entire computation subject to the accuracy of still another guess. Such an appraisal is still further open to attack upon technical grounds, as the manner of using compound discount, and varying opinions are held by experts yielding quite different results from the same basic figures.

This method of plant appraisal does not concern itself at all with present worth or money rates or rates of earning which may be called satisfactory. It seeks only to determine the total actual amount of gross operating profits necessary to return a given capital outlay within a given period of time.

If all or most of the gas contracts under which a gas supply for the plant is obtained expire or are cancellable on short notice after, say the middle of the second year hence, no one would think of investing in the plant a sum greater than could be recovered from gross operating profits within the next three years at the outside.

It is therefore necessary only to use the estimated annual production for the next three years in determining the amount of these gross profits, and this figure can be approximated much more closely than an estimate involving the next seven or eight years. Also, a guess at the future average selling price for the next three years is much more valid than one covering the longer period and it is not necessary to assume a satisfactory rate of earning before proceeding with the appraisal. The operating statement of the plant is then resorted to. The cost per gallon for gas is divided by the average selling price per gallon over the same period, and the chosen future average selling price per gallon is multiplied by this ratio to determine what will be the cost of gas at that plant with gasoline selling at the chosen price. From the total cost per gallon on the operating statement are deducted the following unit costs:

Cost of gas per gallon of gasoline
Cost of Depreciation per gallon of gasoline
Cost of overhead per gallon of gasoline

leaving a balance which is actual plant operating cost per gallon.

To this is added back the new gas cost arrived at as above described, and the purchaser's gallonage overhead charge, but no depreciation, since the depreciation (or total amortization of capital cost) is dependent solely upon the price paid, which is the figure we are seeking.

The total of these costs is then the estimated manufacturing cost of gasoline under the market conditions chosen. Deducting this from the chosen future average selling price, there is left a future average gross profit per gallon.

This, multiplied by the estimated annual production for the next three years, gives the estimated gross profits from operation at the end of three years. This, then, is the most that can reasonably be paid for the plant, and if it exceeds the physical appraisal, the excess is cost of gasoline in the ground.

To Pay Out In Three Years

THE value thus derived is the value for this plant to "payout" in three years, provided that market conditions approximate the estimated selling price. If the project must then be abandoned through inability to renew contracts, the buyer will at least have received his money back and will still have the salvage in the plant for his profit. If the project can be continued, all gross profits after the third year will be true profits and will represent the purchaser's return on his investment.

By whichever method value is computed, the values arrived at are much lower than are supposed or alleged by many to prevail. If some method of plant appraisal which took into consideration the operation of fixed charges were resorted to by everyone contemplating the construction or purchase of a plant, there would be far fewer dazzled by the size of the gross operating revenue, and there would be far fewer disasters in the industry, the cost of which falls on the survivors and on the public.

Gasoline production can never properly be quoted at a flat rate per gallon. Instead, its value is inseparably connected to the life of the gas supply and to the conditions of the gas purchase contracts. Also capital charges, such as depreciation and depletion are direct functions of the purchase price paid for the property and have no definite or universally applicable value either as to amount or rate.

Under present market conditions, or under any that can reasonably be expected to prevail over the next three or four years period, values approaching $100 per gallon of current daily production could rarely be paid without far exceeding the 10 per cent of selling price limitation for bonus cost of gasoline in the well.

L. F. Bayer

General Manager, Tidal Refining Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

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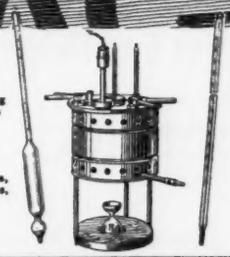

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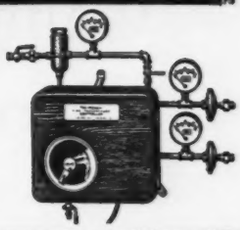

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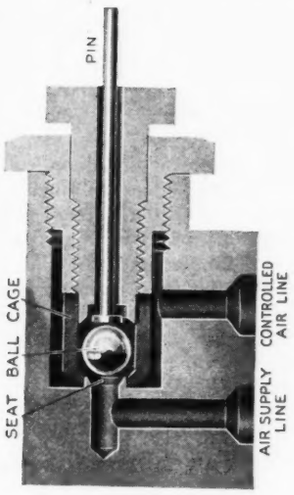

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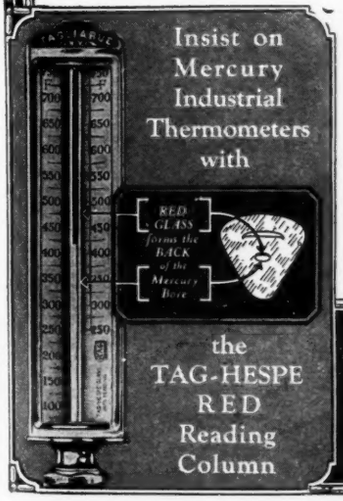

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California Natural Gasoline Industry Now on Settled Prosperous Basis

By R. E. Bering
President, California Gasoline Corp.
(*Written Exclusively for National Petroleum News*)

LOS ANGELES, April 30

THE year 1925 was an excellent one for the natural gasoline manufacturers in California. The heavy overproduction during 1923 had largely declined. During 1923 several hundred thousand barrels per day of crude oil were produced in excess of the current market demand and the needs for export.

Naturally, during that time, the price of oil and all of its own products declined almost to a ruinous point; except for large flowing wells, prices received for oil did not pay for the cost of producing.

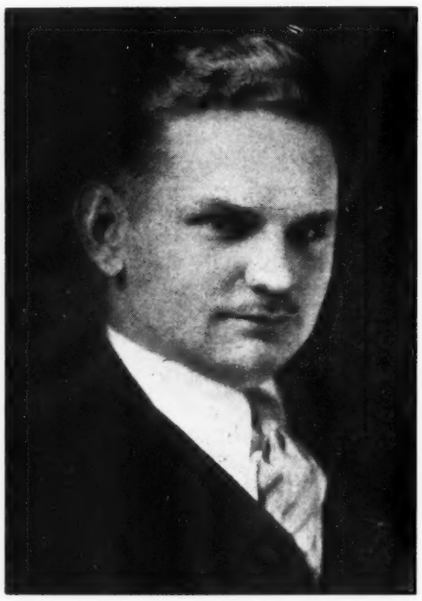
Refiners suffered as did the natural gasoline manufacturers. Motor fuel sold as low as 10 cents per gallon on the streets of Los Angeles. Natural gasoline declined to approximately 5 cents per gallon with practically no market for the product. However, as a natural result, the larger producers and refiners of California commenced the development of an export business for the state's surplus oil and gasoline. This business has grown during the past three years until the demand for California oil and gasoline has reached enormous proportions.

The very large daily production, because of increased local consumption and the above referred to foreign demand, does not menace the industry at the present time. The natural gasoline business commenced to improve during the early part of 1924, and there has been a steady growth in demand and consequent improvement of prices since then.

Cargo Blending

THE use of natural gasoline in blending up cargoes of export gasoline has been largely responsible for the present excellent condition of the industry in California. It is believed that the world has come to look upon California gasoline as an excellent product, and that as long as California continues to produce a surplus of gasoline it will continue to find a ready and profitable market for its products.

Foreign shipments require much greater percentages of natural gasoline than do the local markets. European demand especially requires the use of at least 10 per cent more natural gasoline than is ordinarily blended with the domestic product. Because of the unstable condition of 1923 the character of the oil business has largely changed in California and the natural gasoline industry has benefitted exceedingly by the change.



R. E. Bering
President, California Gasoline Corp.

Present Production

PRIOR to 1923, California was not self-sustaining in its natural gasoline production. Large quantities were shipped from the Mid-Continent fields to supply the local demand for blending purposes. However, at the present time the state is producing one million gallons per day, from a total of 145 plants. Most of these plants have been installed since 1923 and a large part of the daily production now comes from these later installations. The older fields of the state were largely heavy oil producers and consequently did not furnish gas with high gasoline content. The last half dozen fields, however, have generally been high gravity producers and the gas production therefrom has been rich in gasoline.

Most of the newer plants were built during 1923 and 1924, in the height of the expansion of oil production in the state. Quite a number of them, as well as some of the older plants, have been forced to shut down because of the depletion of their gas supplies. Most of these plants, however, were not built with relation to adequate gas supply in the beginning and they were destined to a short life at best.

The plants which handled large excess quantities of gas during the flush periods are at the present time able to operate at practically maximum capacity. The natural gas has, of course, declined, but the increased gasoline content, resulting from the lowered pressure in the fields has, in most cases, tended to offset the decline in gas production.

Production Remarkably Constant

THE daily production of natural gasoline from fields such as Signal Hill, Huntington Beach and Santa Fe Springs, has been remarkably constant during the past year. Part of this production can be attributed to the practice of flowing wells with compressed gas, which method come into quite wide use during 1925.

Some producers have found that their oil production has been increased by forcing several hundred thousand cubic feet of gas under pressure of approximately 250 pounds into their wells. This has increased the supply of gas to some of the gasoline plants in the several fields and the total production of gasolien has either been maintained or in some cases increased.

It seems, however, to the writer that this practice, although allowing larger production of both oil and gasoline for the present time, will not be of benefit to the natural gasoline manufacturer in years to come. The practice is only hastening the day when numerous wells will be abandoned. Some companies have experienced a decline in production when a relatively small volume of comparatively lean gas, coming from wells flowing by compressed gas has been mixed with a larger quantity of natural gas taken from wells under vacuum. This seems to have been the experience of operators, however, throughout the country.

The gas volume in the several major fields of southern California has declined to such a point that the com-

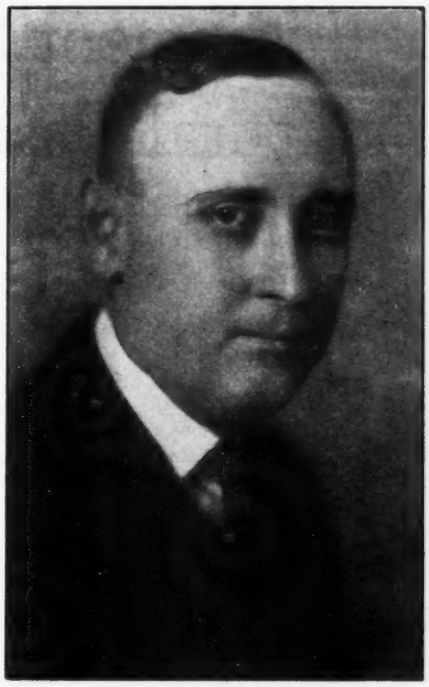
pressor capacity of the several plants is sufficient to maintain relatively high vacuums on the gathering systems. However, it is not believed that much vacuum has yet reached the wells themselves, except in a few cases. Due to the lowering of the field pressures, and the aging of the wells, the gasoline content in the gas from Signal Hill has increased from about seven-tenths of a gallon per 1000 cubic feet to, in some cases, at least three and one-half gallons per 1000 cubic feet. An average for the field would probably be 2.25 gallons. Santa Fe Springs has increased its gasoline content to perhaps a maximum of four gallons and an average of two and one-half gallons. Huntington Beach increased to a maximum of three gallons and an average of two gallons.

It is generally believed that Signal Hill gasoline content will continue to increase until about five gallons per 1000 cubic feet is reached. Santa Fe Springs will probably go to six gallons, because of the higher gravity of its oil production and it is believed that Huntington Beach will ultimately reach about five gallons per 1000 cubic feet. These gasoline contents will, however, be held back as long as a relatively large number of wells are being flowed with compressed gas.

The Athens oil field was producing some gas containing three gallons per 1000 cubic feet and the average was well over two gallons until about six months ago, when flowing of wells became a general practice. The average has now declined to about 1.75 gallons per 1000 cubic feet. It is believed that Signal Hill, Huntington Beach, Santa Fe Springs, Dominguez (these fields being at the present time the major producers of gasoline in the Los Angeles Basin) will continue to produce natural gasoline in substantially the same amounts for the next several years. It is also the general belief that some plants in these fields will continue to produce gasoline for the next 10 or 15 years.

Sales and Consolidations

THERE have been quite a number of sales and consolidations of gasoline companies during the past few months. This is in line with the grouping of companies in the oil industry throughout the country. The United Oil Co. has purchased two plants from the Signal Hill Gasoline Co. and a third plant from the Surety Gasoline Co. at Huntington Beach. The Lovell Gasoline Co. has recently purchased two plants from the La Habra Gasoline Co. in the San Joaquin Valley. The Pacific Gasoline Co. purchased two plants from the Long Beach Gasoline Co. at Signal Hill. The Producers Gasoline Co. at Athens, operating two plants, recently sold the controlling interest to a group formerly owning the Long Beach Gasoline Co.



—Photo by Griggs Studio

H. A. Trower

Sales Manager, Phillips Petroleum Co., Bartlesville, Okla., a director of the Association of Natural Gasoline Manufacturers.

During February, the California Gasoline Corp., being one of the largest independent operators in the state, sold its entire business to the California Petroleum Corp. Its production at the time of sale averaged over 60,000 gallons per day from five plants. There will probably be other sales and consolidations during the next several months as the entire California oil industry is going through a centralizing period, whereby smaller companies are going into the stronger and larger operating groups.

ONE of the interesting recent developments in the state has been the rapid rise of production in the Ventura Avenue field. This field, located about 80 miles northwest of Los Angeles, has developed into a very large producer of high gravity oil together with tremendous quantities of natural gas. Two years ago the natural gasoline production from this area was negligible.

It is now in the neighborhood of 50,000 gallons per day with prospects for still greater development. Two of the major gas distributing companies have recently completed pipe lines from this field to the Los Angeles market and are now handling about 50 million cubic feet per day from the Ventura Avenue field.

There have been two or three types of portable plants developed in California during the past year and they will probably fill a very necessary place in the development of future fields. It is believed that these plants can best be used in new areas where the future production is undetermined. They should be of benefit to gasoline companies, by saving heavy investments in permanent plants in areas which really do not warrant such installations.

MOST of the companies' engineering departments are engaged in developing more efficient fractionating equipment. This development has been forced on the California manufacturers largely because of the increased percentage of high fractions now being obtained from the settled production in the older fields. When gasoline was selling very cheaply there was no incentive to operate gasoline plants at high efficiency.

Now, however, with the present market prices, highly efficient plants mean that the higher fractions with high vapor pressures must be condensed in order to obtain this efficiency. As a result the product has become increasingly unstable in its character. It is believed that this condition can be largely overcome by careful fractionation of the gasoline vapors.

Considerable work is being done to develop a refrigeration method for testing natural gas. It is expected that very definite results will be achieved and that a quick, accurate and uniform method of testing will be developed.

—Photo by J. L. Rivkin

M. E. Mockley

General Superintendent, Gasoline Department, Amerada Petroleum Corp., Tulsa, director of the Association of Natural Gasoline Manufacturers.

Bubble Tower Equipment Serves Three Purposes in Natural Gasoline Plant

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, May 1

ONE of the earliest absorbers used in natural gasoline absorption plants was a bubble type absorber. One of the latest types of absorbers is likewise a bubble type absorber. It is that designed and patented by the Southwestern Engineering Corp.

There is little resemblance between the bubble type absorber of 10 or 12 years ago and that of today. In the old type a series of horizontal tanks were set so that each one was slightly above the next. Rich gas was distributed through the bottom of the tank through a perforated pipe and permitted to bubble up through a body of lean oil before passing into the next absorber.

The modern bubble type absorber is a carefully designed counter-current tower very similar to the bubble tower which has been adopted by the refining industry within the past two or three years to supplant less efficient fractionating equipment.

In two recent articles appearing in National Petroleum News, the writer has described two other modern types of absorbers which vary in construction from the static absorber which the industry has used without material change for a number of years. The first article described the Feld type of scrubber or centrifugal absorber which obtains high efficiency by breaking up mineral seal oil into a fine spray and passing the gas through this spray again and again.

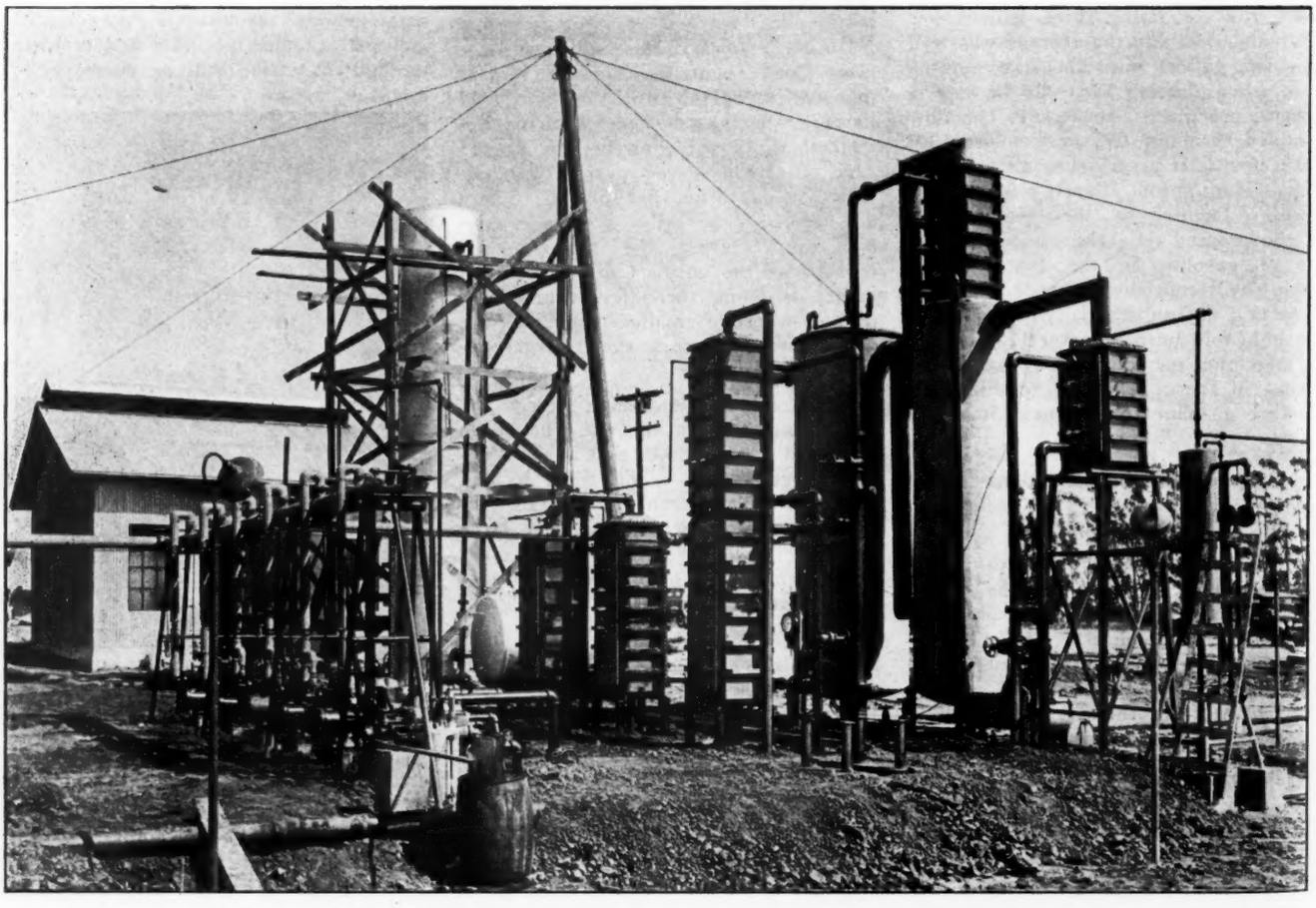
The second described the Newton process absorber in which the gas causes the mineral seal oil to be whipped into a foam to obtain an intimate mixture with no channeling.

The Newton absorber has been arranged with very little change to serve as a vertical steam still calculated to produce a stable gasoline by working out a major portion of the fixed gases which might be dissolved in the gasoline.

Three Uses for Tower

IN the same way the Southwestern absorber has been adapted for use as a vertical steam still. In addition, it has been used in the system a third place. The third use is as a dephlegmator. It is cut in the system between the steam still and condenser system to knock out any entrained mineral seal oil which may have come over from the steam still.

About the only material difference between the three Southwestern bubble towers used for the three different purposes is the number of trays installed in the shell. The usual absorber has 16 trays of bubble caps set 16 inches apart. The evaporator or steam still has from



Producers Gasoline Co. plant in Athens, California field, showing hook-up of absorber, heat exchangers, steam still and dephlegmator.

8 to 10 pans and the dephlegmator from 8 to 10 pans.

Fig. 1 is a cut-away section of one of the trays in the Southwestern bubble tower to show its construction and method of operation. A striking feature of the equipment is the difference between the bubble caps in this tower and the conventional circular bubble caps of the refinery tower. There are eight or more rectangular caps in each tray set at right angles to two weirs, one of which is shown in the drawing.

The pipe K in the drawing is the overflow line from the tray above to carry the mineral seal oil. It empties the oil behind the weir L, the end of the pipe, of course, extending below the liquid level. It will be noted that the weir is notched. These notches are opposite the openings between bubble caps so as to direct the flow of mineral seal oil across the tray between the caps. Oil flows over the opposite weir, which is not shown in the drawing, and drops down the overflow line to the next tray below. The method of flow from tray to tray may be seen in the vertical section of the tower illustrated in Fig. 2. The overflow weir regulates the oil level in the tray to the line G.

Level Equalizer

ANOTHER interesting feature of the tower is the oil level equalizer lettered F, in the drawing. Three of these are attached below each pan.

In case of a weak flow of gas through an absorber it was believed by the designers that the gas might find a way through a few of the nozzles E and start channeling. This would not be broken up as long as the flow was weak. The same situation might arise if the tower were setting even a little off the perpendicular.

The oil level equalizer is merely a header connected with a series of openings into the tray. If a channel should be opened on one side and no gas be coming through other nozzles the mineral seal oil would drop down into the equalizer on the low or inactive side and lower the oil level to a point where flow would start and the oil level be equal

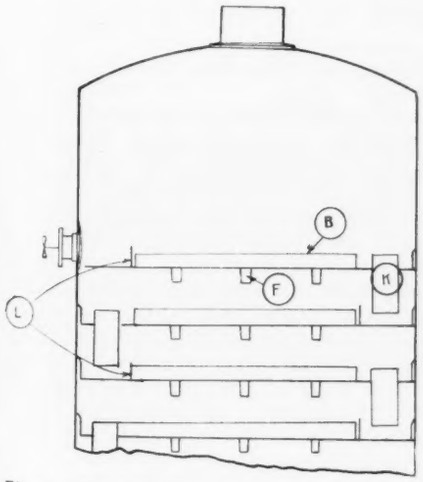


Fig. 2. Vertical section of Southwestern absorber. Lettering same as in Fig. 1.

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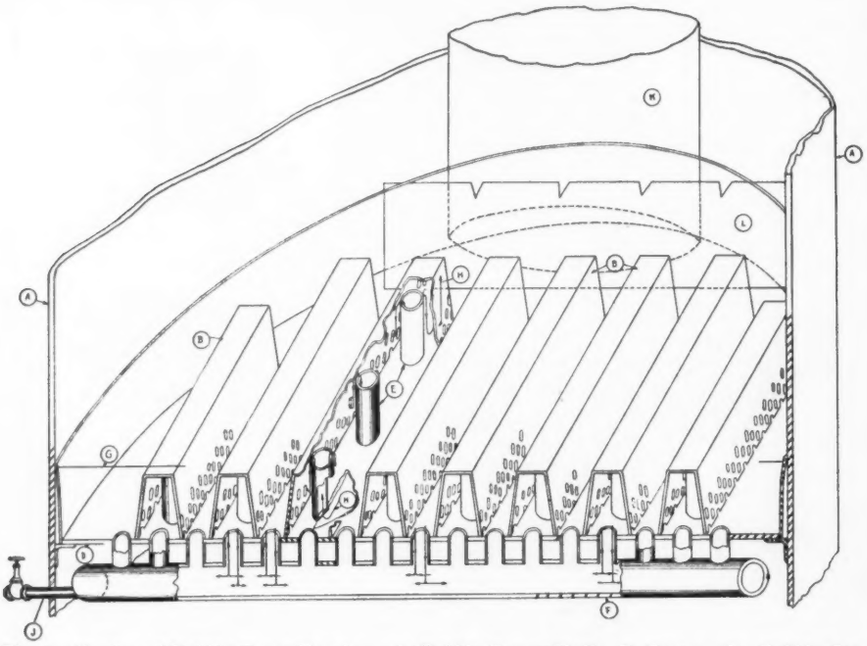


Fig. 1. Section of Bubble Type Absorber. A, Bubble Tower Shell. B, Rectangular Bubble Cap. D, Bubble Pan. E, Gas or Vapor Nozzle. F, Oil Level Equalizer. G, Oil Level. H, Gas or Vapor Flow. J, Drain Connection. K, Overflow Pipe. L, Weir.

across the pan. With this feature and the notched weir directing mineral seal oil between the caps it is claimed by the designers that channeling is impossible.

A feature of the oil level equalizers is the drain connection J which is provided so that the operator may sample the oil to check operation of the tower. An analysis of samples from all trays should make a smooth curve of saturations. If the curve should exhibit any breaks or steps the operator will know that something is wrong with the tower and remedy the situation.

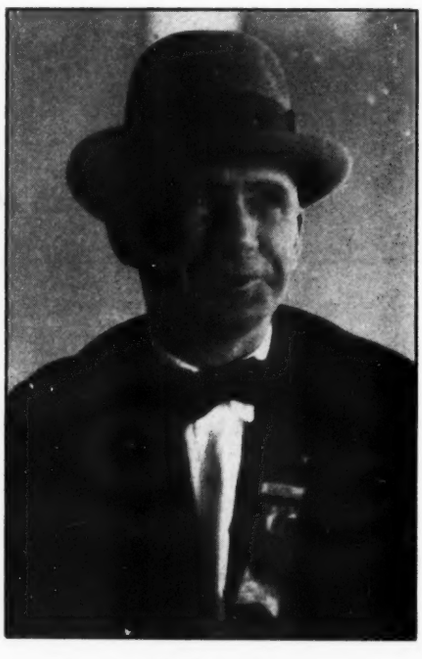
A small hole is provided in each equalizer, inside the tower, to bleed any water in the oil down through the column. This hole is not indicated in the drawing.

USED as an absorber, normal operation contemplates the use of 30 pounds pressure. On this basis an average saturation of 5 to 6 per cent is obtained in plant operation. This varies with the type of gas since some rich gas will give up its gasoline much easier than other varieties. At some plants mineral seal oil saturation has run as high as 17 per cent at a pressure of 20 pounds per square inch.

To give the bubble tower flexibility, the designers have provided a slot area equal to 26 per cent of the gross plate area of the tower. With this large space for passage of gas it is possible to circulate a large amount of gas without creating a back pressure. The average pressure drop through the tower has been found to be two pounds.

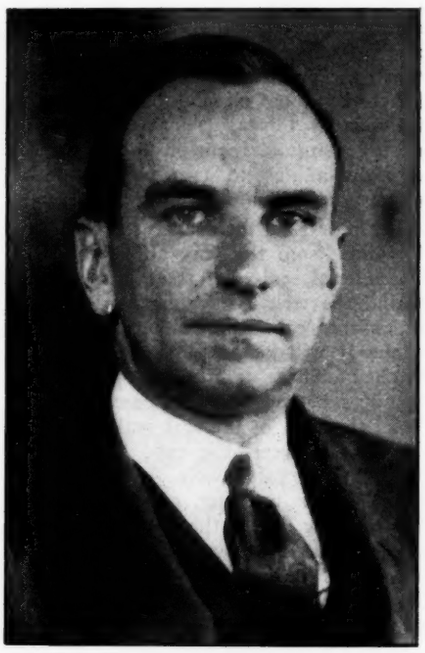
As mentioned above the oil level equalizers have been designed to permit operation of the absorbers at low rates. The towers have been operated through a range of from 10 per cent of normal capacity to an overload of 100 per cent. It is the claim of the manufacturers that the gas will be denuded of its gasoline content up to the point where the mineral seal oil starts to misting.

Equipment manufacturers who have been specializing on natural gasoline plant apparatus have devoted their energies during the past few years to the development of absorbers which would give a high percentage of saturation to the mineral seal oil to reduce the amount of oil circulation. As the oil circulation is brought down it follows that a less expensive distillation installation can be utilized, since capacity can be reduced.



R. R. Owen

General Superintendent, Gasoline Department, Marland Refining Co., Ponca City, Okla., director of the Association of Natural Gasoline Manufacturers.



J. A. Rafferty

Vice President and General Manager, Carbide & Carbon Chemicals Corp., New York, director of the Association of Natural Gasoline Manufacturers.

With this development has gone improvements in the distillation equipment designed to strip the oil of its gasoline with the lowest possible consumption of steam. It is the claim of the Southwestern engineers that their bubble type vertical still strips down to a saturation of half of one per cent or less in normal operation.

As in the case of the bubble absorbers, the stills are calculated to operate efficiently over a wide range of loads. Capacities of single stills are high to reduce expense. The company builds one still which is calculated to handle an oil circulation of 500,000 gallons per day.

Accompanying this article is a photograph of a southwestern equipped gasoline plant. It is the Athens field plant of the Producers Gasoline Co. in California. The photograph illustrates the line-up of absorber, heat exchangers, steam still and dephlegmator.

The first Southwestern towers were installed in the Mid-Continent field last September in a portable plant. The equipment has been used in California for about a year and a half. In addition to the many portable plants now in use in the Mid-Continent, some permanent installations are being made. Marland Refining Co. is installing a 22,000 gallon plant to enlarge its vapor recovery system at the refinery at Ponca City where a great deal of enlargement work is in progress.

Economic Value of Natural Gasoline To The Refiner

By E. R. Lederer
Vice President, Texas Pacific Coal & Oil Co.
Delivered before Natural Gasoline Manufacturers Assoc. Tulsa, May 6.

THE economic value of natural gasoline to the refiner and to the consumer of motor fuel is extremely important. The enormous increase in the demand for gasoline during the last decade had to be met by the use of heavier fractions from the crude and by the rapid development of cracking processes. The products from both these operations require a great percentage of natural gasoline to supply the necessary lower boiling fractions to blend them into a satisfactory motor fuel and meet the present specifications for U. S. Motor gasoline.

The ever increasing demand for motor fuel can be met—considering the continual decline of available light gravity crude with a large content of natural or straight run gasoline—only by installation of more and more cracking units, in order to convert heavy crudes or the heavier residues or fuel oil into gasoline. As long as this condition exists the manufacture of natural gasoline will be an important factor in the petroleum industry.

In these days of close margins of profit the refiner can sell his light fractions to better advantage blended with a certain percentage of natural gasoline, than he could selling straight run or cracked gasoline alone. He can—by proper blending—produce from the same crude several grades of gasoline like 56-58 U. S. Motor or 450 E. P. gasoline; 58-60 U. S. Motor or 450 E. P. gasoline; 60-62 grade or 64-66, and 68-70 or 70-72 gasoline, the latter grades especially for export, which permits him to adapt his production to market conditions.

Must Revert to Blending

SUCH variety of grades and quick changes in refinery operations would be impossible if he could not revert to blending with natural gasoline. Natural gasoline is, therefore, very widely used by the refiner in the manufacture of motor fuels and enters to the amount of 40 or 50 per cent in certain blends. This is particularly true in the blending of the lighter gravity gasolines, for which there is a large demand in certain sections of the country, and also an increasing export demand.

The use of natural gasoline is essential to the refiner in order to obtain maximum returns for his products. The demand for high test gasoline in cold weather for both domestic and export business usually offers profitable business to the refinery. Naturally the demand for natural gasoline has increased in proportion to the demand for motor fuel for domestic or export trade and the natural gasoline industry has grown in a few years from comparative insignificance to an important economic factor.

E. R. Lederer

Vice President, Texas-Pacific Coal & Oil Co., Fort Worth, Tex., director of the Association of Natural Gasoline Manufacturers.

We have today probably 1200 natural gasoline plants in the United States, with an approximate capacity of 4,500,000 gallons a day, and the consumption of over one billion and one hundred million gallons natural gasoline during 1925 proves clearly the value and demand for this product.

Statistics of the Bureau of Mines for 1925 show that the demand for motor gasoline was met as follows:

Straight Run Gasoline	67%
Cracked Gasoline	26%
Natural Gasoline	7%

This figure of "7 per cent of the entire gasoline production of the country" might at first look small; however, it does not represent the relative importance of this product to the refining industry. Dr. Burrell states in his recent book that "natural gasoline makes satisfactory for motor fuel a quantity of gasoline equal to at least 20 per cent of the motor fuel of the country."

Recently we have heard quite a bit of discussion about the possibility that increased cracking would decrease the quantity of natural gasoline needed for blending and that "light" cuts could be made off the "crackers" if the necessary fractionating equipment would be installed in connection with the cracking units. It is entirely possible to make specification motor fuel in a modern cracking installation, but the refiner usually finds it more economical to operate at a maximum capacity, paying more attention to maximum yields and depending on natural gasoline to supply the lower boiling fractions in the production of the proper motor fuel.

An Economic Problem

IN making such "lights" cuts directly from the cracking units the refiner saves probably some treating expenses, but decreases the value of the balance of the gasoline distillate. No cracking process produces light hydro-carbons of the same boiling point or of a "close cut" nature, but it produces hydro-carbons of quite different boiling points simultaneously—according to pressure and temperature applied—and the high end point products of 437 or 450 E. P. must be taken out with the low end point groups of 375 or 400 E. P.; or must be refluxed or recycled and cracked over again in an attempt to produce low end point distillates only.

This would require pressures and temperatures in excess of those necessary to crack kerosene or light gas oils, and this has so far proven impractical and uneconomical. The refiner who separates this light gasoline from the cracked gasoline distillate obtains a heavy naphtha distillate, which has to be treated heavily and rerun and separated into naphtha and gas oil. In order to

convert this heavy naphtha into a marketable motor fuel he has to blend it with a much higher percentage of natural gasoline or sell the low gravity out at a sacrifice. It is clear that such a procedure in fractionation—even if of advantage in some cases to the refiner—is not reducing in the long run the total amount of natural gasoline needed for blending.

Changed Refinery Practice

NATURAL gasoline has had considerable and economically important influence in changing the former methods of distillation and fractionation in refinery practice. If a crude was deficient in low boiling point hydrocarbons, the gasoline cut had to be made at such temperatures that the mixture of all fractions or the resulting gasoline had the proper gravity, initial and intermediate boiling points required by existing specifications. Thus frequently 10% and more of the lighter fractions or naphtha had to be sold at a lower price than gasoline. Now, with the improved type of fractionating columns the refiner can regulate his cut for the highest end point allowed by the specifications and make up for the lack of lighter hydrocarbons, by blending with natural gasoline and produce a much larger yield of good motor fuel, which will meet all specifications and requirements. It is, therefore, possible, by proper blending, to utilize and increase the value of heavier hydrocarbons which amount often from 10 to 20% of the crude.

With the passing of the gravity method of grading gasoline and the substitution by the Standard Distillation Method of the American Society of Testing Materials for determination of the volatility of the motor fuel, the refiner has become more dependent on the use of natural gasoline to blend a specification motor fuel. The profit from the increase in value of heavy naphthas has helped a great deal during periods of low markets to keep the refinery going, and break even, and when better prices prevailed they were very material in producing a favorable balance sheet.

THE advantage of blending with natural gasoline will become still greater if the Federal Specification Board will remove the End Point specification, leaving the 90% over point as indicative for quality and limit for the inclusion of too many heavy hydrocarbons. It is easier to correct the 90% oven-point by blending with natural gasoline than the end point and such a change would enable the refiner to increase the yield of gasoline distillate by including such heavier hydrocarbons, which by proper blending with natural gasoline could be made to meet intermediate and 90% over boiling points, and produce a very desirable motor fuel. It is evident that in this case again natural gasoline will help in increasing the total amount

H. R. Johnson

Secretary and Treasurer, Akin Gasoline Co., Tulsa, director of the Association of Natural Gasoline Manufacturers.

of gasoline produced by refineries in the United States and thus meet the ever growing demand for Motor Fuel.

The steady decline of light crudes, rich in light gravity gasoline, would have been a serious handicap for the Export Trade, were it not for the increased supply and use of natural gasoline in blending for export specifications the distillates produced in our refineries from heavier crudes. As long as the export trade insists on high gravity gasoline, 64-66 and 60-62 gravity, it will not only take a large percentage of high grade natural gasoline to blend for these grades, but even more so to make domestic motor fuel from the remaining naphtha after the lighter hydrocarbons have been taken out for export grades.

However, we must not neglect the fact that the foreign buyers and public are becoming aware that they are paying too much for these high gravity export grades; refining capacity in England and her colonies is increasing continually, and more gasoline is produced annually by these refineries abroad. They will encounter and meet the same problems as we have in America and educate the motoring public to the use of lower gravity motor fuels. Already more 58-60 gasoline is imported into Europe each year in place of 60-62 or 64-66. Foreign engineers and chemists are working with all energy and diligence on "substitutes" for gasoline as suitable motor fuels. But even should the export market for gasoline fall off, the domestic demand for motor fuel will increase and in all probability offset such a decrease in foreign shipments.

Future Demand

FUTURE demand for natural gasoline should be as great as in the past. Improved fractionation and increase in the number of cracking units will require more natural gasoline to produce a satisfactory motor fuel. The use of natural gasoline in the manufacture of motor fuels not only enables the blended product to meet the necessary specifications for motor fuel, but actually makes a superior product from the consumers' standpoint, which is of economic importance to the refiner using natural gasoline in making his motor fuel superior for the market.

The low initial and lighter fractions supplied by natural gasoline aid in starting the motor. The lighter hydrocarbons being richer in hydrogen and consequently having a higher calorific value mean more power to the motor. Natural gasoline means less knocking of the engine since it has been found that the heavier paraffin hydrocarbons detonate more readily than the lighter groups.

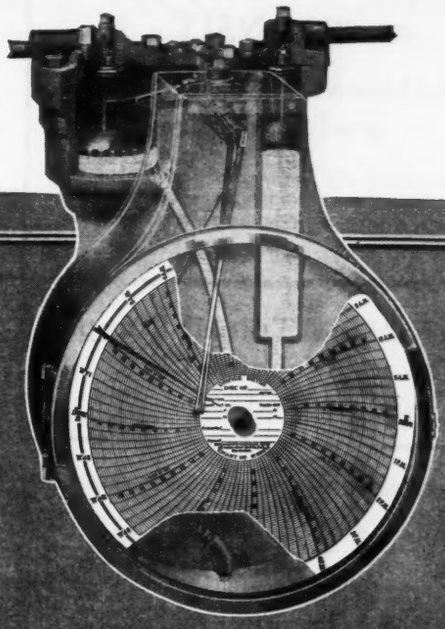
In conclusion we may state that the economic value of natural gasoline to the refiner is of such importance that it would be very difficult under present specifications to obtain maximum returns for his products without using it. The position of natural gasoline in the petroleum industry has become well established. It not only adds very valuable constituents to the motor fuel, but enables the refiner to utilize more advantageously his heavier naphthas from the crude, thus imparting greater value to them in the preparation of specification motor fuels and also to operate his cracking units at a maximum capacity with less regard to the lower boiling fractions, depending upon the use of natural gasoline to supply this deficiency economically and efficiently.

Important Contributions Made By Oberfell

TULSA, May 3.—If it were possible to drink natural gasoline as a beverage it is highly probable that it would be the favorite drink of George Grover Oberfell, technologist for the Phillips Petroleum Co. Natural gasoline is his hobby to the exclusion of almost everything else.

Mr. Oberfell interested himself in natural gasoline some 12 years ago when it was an infant industry. He has been so immersed in developing the processes of manufacturing that it has been rumored that he talks about it in his sleep. When the picture on page 80 was taken, he was on his way to a meeting of natural gasoline manufacturers, hence the broad smile of anticipation.

In 1912 he became a member of the



"No type of volume measuring apparatus has received so much attention as the simplest form of velocity meter, the ORIFICE meter. This type meter, with differential gauge, has proven to be the most accurate and dependable apparatus designed for the measurement of gases and liquids flowing in pipe lines.

"Many simple and complicated forms of velocity meters have been designed, but up to the present time, none has obtained any advantage over the ORIFICE, except at the expense of those most fundamental qualities —accuracy and dependability."

Quoted from Westcott's "Measurement of Gas and Liquids by Orifice Meter"
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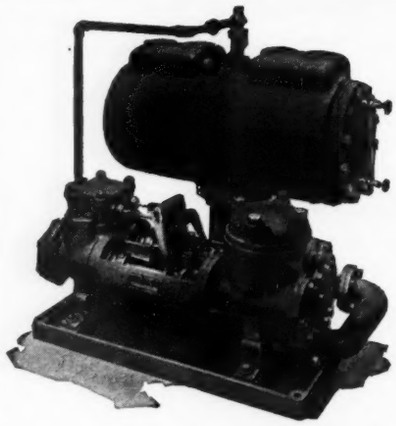

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TULSA, OKLAHOMA

George Grover Oberfell, technologist for the Phillips Petroleum Co.

technical staff of the U. S. Bureau of Mines. He published one of the first comprehensive studies of the technology of the natural gasoline industry in collaboration with Geo. A. Burrell in 1915.

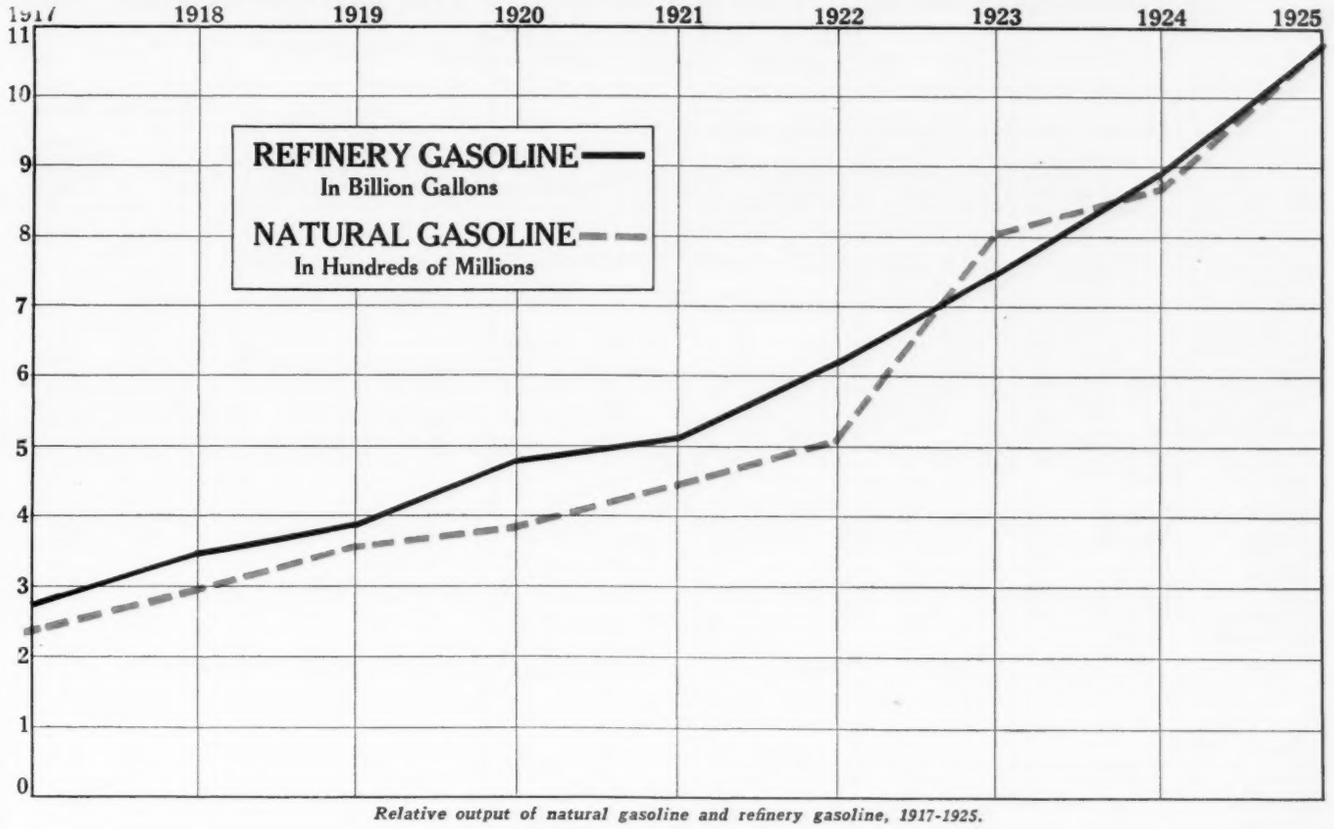
During the war Mr. Oberfell served in the Chemical Warfare Service and was instrumental in developing charcoal for use in gas masks. This work led him and Mr. Burrell to the invention of the charcoal process for manufacturing natural gasoline and on his own account to perfect the charcoal method of gas testing. This work was largely done while Burrell and Oberfell were doing consulting engineering work in 1919.

After three years service as technologist for the Chestnut & Smith Corp. Mr. Oberfell resigned in 1923 and built a number of gasoline plants in the Mid-Continent as consulting engineer. A little later he was associated with the Hope Engineering & Supply Co. until he joined the Phillips staff in 1924.

In collaboration with R. C. Alden, Mr. Oberfell wrote a handbook on "Natural Gasoline" which was published in 1924. This book contained the first comprehensive discussion of the factors affecting oil rate requirements of natural gasoline plants. This work advanced the proposition that "at every absorption pressure there is a definite oil rate per unit volume of gas which will completely extract the gasoline from natural gas no matter what its gasoline content may be, all other conditions being the same."

A natural gasoline plant control apparatus was recently developed by Mr. Oberfell for the purpose of testing denuded mineral seal oil to check still efficiency. This device is known as the R. S. control apparatus for solvent recovery plants.

PROGRESS IN NATURAL GASOLINE INDUSTRY



Relative output of natural gasoline and refinery gasoline, 1917-1925.

Pioneer Manufacturer Not Care Worn

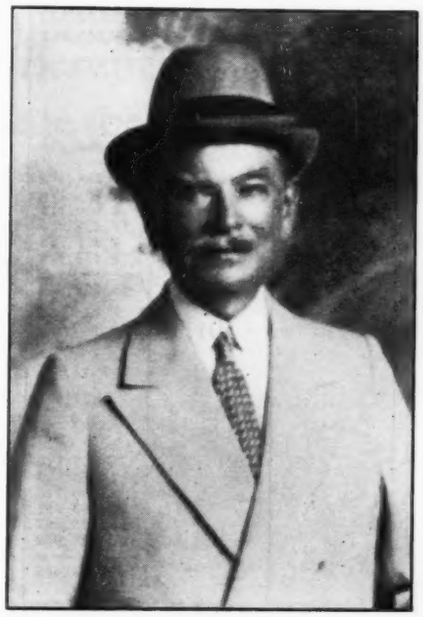
Staff Special

TULSA, May 3.—The accompanying photograph of F. C. Henderson, president of the Henderson Co., does not appear to confirm the fact that this pioneer manufacturer of natural gasoline celebrated his 68th birthday a few weeks ago.

The fact that his gasoline plant near Nowata was making a product a number of years ago which no one cared to buy at any price, has not bowed his shoulders with care, nor the fact that he has drilled his share of dry holes from time to time.

At the present time Mr. Henderson divides his time largely between his two homes at Palm Beach and New York. His official residence is Palm Beach, possibly because he is such an ardent golf fan.

Mr. Henderson came to Oklahoma about 1910 and interested himself in the Alluwe field. He had 200 producing wells in 1911 which he sold out to the Wiser Oil Co. The Henderson gasoline plant about five miles east of Nowata was one of the first built in Oklahoma. Some have asserted that it was the first. When he moved the plant in 1911 to its present site eight miles northeast of Nowata he installed probably the first modern gas gathering system for a gasoline plant.



J. C. Henderson, president of the Henderson Co., and one of the pioneer gasoline manufacturers.

The Henderson plant was hooked up with about 500 wells and three booster stations were installed to bring the gas into the plant. As far as is known this was the first use of booster stations for this purpose.

Production of the plant climbed up to over 25,000 gallons per day, which would be considered a good production even today. Then it was more or less of a tragedy. Naphtha was brought in to the plant and Mr. Henderson obtained a blend contract with the Standard Oil Co. of Indiana which was kept in force until two or three years ago.

Before he married and moved to the east Mr. Henderson had an office and residence in one room at Nowata from which he developed his extensive producing and gasoline properties.

Jobber's Duckpin Teams Finish Season

BALTIMORE, MD.—The four duckpin teams of Sherwood Bros., Inc., oil jobber and compounder of this city, wound up their season recently with the Rexolines claiming the silver team cup as winners. In the match between the Rexolines and the Sherwood Straights, one of the games was a tie and it was necessary to roll it off to decide. It was won by one pin.

The Betholines finished second; the Liberty Lights third and the Sherwood Straights last.

The individual silver cup, offered each year by J. W. Sherwood, president, was awarded to "Cash" Jurgens, so named because he is cashier of the company, according to J. S. Aler, assistant sales manager of the lubricating department.

NATURAL GASOLINE STATISTICS COVERING THE UNITED STATES
1911 - 1925 BY STATES
(No statistics available prior to 1911)

State	Number of operators Reporting	Number of Plants	Raw (unblended) Gasoline Produced In U. S. Gallons: Compression Method	Raw (unblended) Gasoline Produced In U. S. Gallons: Absorption Method	Raw (unblended) Gasoline Produced In U. S. Gallons: Total Production	Value: In Dollars	Value: Average Per Gal. In Cents	Estimated quantity of Natural Gas treated: M cubic feet	Estimated quantity of Natural Gas treated: Average Yield per M cubic feet (Gallons)
1911									
California, Colorado, Illinois, Kentucky, New York	8	7	.....	.....	231,588	$ 20,258	8.75	82,343	2.81
Ohio	26	39			1,678,985	118,161	7.04	469,672	3.57
Oklahoma	8	8			388,058	20,975	5.40	144,629	2.68
Pennsylvania	43	50			1,467,043	109,649	7.47	526,152	2.79
West Virginia	47	72			3,660,165	262,661	7.18	1,252,900	2.92
Total 1911	132	176			7,425,839	531,704	7.16	2,475,697	3.00
1912									
Colorado, Illinois, Kentucky, New York	2 4 1 1	2 4 .. 1	.....	.....	386,876	41,795	10.8	114,274	3.4
California	7	7			1,040,695	112,502	10.8	600,743	1.7
Ohio	25	43			1,718,719	173,421	10.1	576,123	2.98
Oklahoma	11	13			1,575,644	99,626	6.3	701,044	2.25
Pennsylvania	69	83			2,041,109	217,016	10.6	722,730	2.8
West Virginia	66	97			5,318,136	513,116	9.6	1,972,882	2.8
Total 1912	186	250			12,081,179	1,157,476	9.6	4,687,796	2.6
1913									
Colorado	2	2							
Illinois	6	12							
Kansas	1	1	.....	.....	721,826	79,276	10.98	203,092	3.55
Kentucky	1	...							
New York	3	3							
California	12	14			3,460,747	376,227	10.87	2,436,445	1.42
Ohio	25	41			2,072,687	212,404	10.25	744,226	2.79
Oklahoma	19	40			6,462,968	577,944	8.94	2,152,503	3.00
Pennsylvania	100	113			3,680,096	405,186	11.01	1,372,056	2.68
West Virginia	63	115			7,662,493	807,406	10.54	2,981,119	2.57
Total 1913	232	341			24,060,817	2,458,443	10.22	9,889,441	2.43
1914									
Colorado	2	2							
Kansas	3	3							
Kentucky	1	..	.....	.....	299,573	23,604	7.88	146,345	2.03
New York	3	3							
California	17	19			7,581,309	633,517	8.36	5,129,709	1.48
Illinois	7	14			1,164,178	100,331	8.62	462,321	2.52
Ohio	25	47			2,440,171	184,097	7.54	852,277	2.86
Oklahoma	35	58			17,277,255	1,113,059	6.44	5,738,549	3.01
Pennsylvania	96	119			4,611,738	359,402	7.79	1,560,064	2.89
West Virginia	65	121			9,278,108	691,899	7.45	3,005,292	2.58
Total 1914	254	386			42,652,632	3,105,909	7.28	16,894,557	2.43
1915									
Colorado	2	2							
Kansas	3	2							
Kentucky	2	1	.....	.....	877,424	70,258	8.01	664,309	1.32
Louisiana	2	2							
New York	4	4							
Texas	1	1							
California	18	20			12,835,126	975,397	7.60	8,006,888	1.60
Illinois	8	16			1,035,204	80,049	7.73	451,663	2.29
Ohio	29	50			2,198,715	167,138	7.60	758,041	2.80
Oklahoma	36	63			31,665,991	2,361,029	7.46	8,791,881	3.60
Pennsylvania	116	139			5,898,597	569,873	9.66	1,838,034	2.73
West Virginia	66	114			10,853,608	927,079	8.54	3,526,575	2.30
Total 1915	287	414			65,364,665	5,150,823	7.88	24,064,391	2.57
1916									
California	28	26	(Included under Ills., Kans. and Ky.)		17,158,754	2,293,822	13.37	24,826,354	.691
Colorado, New York	7	6	249,055	.....	249,055	40,283	16.17	102,819	2.422
Illinois	17	32			2,260,288	262,664	11.58	1,338,594	1.688
Kansas	4	3	*19,428,443	*3,569,637	215,000	35,030	16.29	1,626,635	.132
Kentucky	5	5	*Includes California and O.		725,467	141,347	19.48	5,614,613	.129
Louisiana	7	7	213,159	.....	2,113,159	269,564	12.76	907,153	2.329
Ohio	40	55	(Included under Ills., Kans. and Ky.)		2,638,571	470,804	17.84	5,435,759	.485
Oklahoma	77	116	45,827,325	2,532,277	48,359,602	5,865,145	12.13	24,749,454	1.954
Pennsylvania	167	195	6,722,370	2,992,556	9,714,926	1,726,173	17.77	38,490,621	.252
Texas	3	4	1,292,811	.....	1,292,811	201,023	15.55	948,485	1.363
West Virginia	105	147	9,289,624	9,475,432	18,765,056	3,025,293	16.12	104,664,536	.179
Total 1916	460	596	84,922,787	18,569,902	103,492,689	$14,331,148	13.85	208,705,023	.496

Forecast of Mr. Walter C. Teagle, President, Standard Oil Co. (N. J.), delivered before the Federal Oil Conservation Board at Washington, D. C., Feb. 10 and 11, 1926, quoted:

(From the official record as printed by the Government Printing Office, Washington)
(Italics used are ours)

"Where gasoline can be produced from fuel oil by cracking, cheaper than gasoline produced from the initial distillation of crude, self-interest will prompt the industry to install cracking equipment rather than run additional quantities of crude.

"This has been the trend of the industry during the past two years, a trend which will undoubtedly be more marked if in the future the existing differential between the price of fuel oil and crude be maintained or increased."

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

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1917									
California	45	49	23,478,521	5,339,083	28,817,604	$4,438,022	15.40	45,351,247	.635
Colorado / New York	7	6	*369,925		181,262	33,116	18.27	68,154	2.659
			*Includes Kans. and Ky.		7,000				
Illinois	33	55	4,268,158	665,851	4,934,009	866,033	17.55	2,685,895	1.837
Kansas	4	6		1,071,633	1,174,980	241,219	20.53	9,315,339	.126
Kentucky	5	5	†369,925						
			†Includes Colo. and N. Y.	3,725,893	3,818,209	763,186	19.99	24,915,946	.153
Louisiana	15	20	4,459,920	519,834	4,979,754	814,747	16.36	2,233,511	2.229
Ohio	49	61	2,331,498	3,018,062	5,439,560	1,051,376	19.33	30,062,141	.181
Oklahoma	167	234	108,728,213	6,395,211	115,123,424	21,541,905	18.71	84,719,941	1.359
Pennsylvania	287	251	9,011,199	4,815,051	13,826,250	2,778,098	20.01	49,487,056	.279
Texas	10	11	3,942,337	2,978,068	6,920,405	1,149,441	16.61	12,677,216	.546
West Virginia	128	188	12,276,784	20,391,863	32,668,647	6,511,813	19.93	167,771,351	.195
Total 1917	750	886	168,866,555	49,017,549	217,884,104	40,188,956	18.45	429,287,797	.508
1918									
California	29	56	25,767,346	6,501,587	32,268,933	5,009,152	15.5	50,490,019	.64
Colorado / New York	5	4	98,788 / 211,131	280,463 (includes Wyo. also)	2,475 / 218,131	620 / 55,405	25.1 / 25.4	619 / 99,487	4.00 / 2.19
Illinois	34	72	4,574,565		4,574,565	890,436	19.5	2,316,646	1.97
Kansas	5	11	802,773	1,587,083	2,389,856	593,730	24.8	16,023,067	.15
Kentucky	5	6	98,788	3,234,673	3,330,986	660,108	19.8	19,816,518	.17
Louisiana	9	18	5,903,723	1,116,815	7,020,538	1,178,651	16.8	13,462,317	.52
Ohio	36	55	2,035,406	4,709,501	6,744,907	1,355,447	20.1	37,739,322	.18
Oklahoma	133	276	154,271,605	9,428,945	163,700,550	28,389,045	17.3	78,322,307	2.09
Pennsylvania	200	282	9,158,795	6,616,263	15,775,058	3,249,233	20.6	56,982,063	.28
Texas	8	13	4,024,898	3,301,224	7,326,122	1,214,565	16.6	8,493,182	.86
West Virginia	79	208	11,612,114	25,991,789	37,603,903	7,498,804	19.9	163,929,550	.23
Wyoming	2	8	1,306,063	Included in Colo. and N.Y.	1,579,526	268,339	17.0	1,433,564	1.10
Total 1918	503	1,004	219,767,207	62,768,343	282,535,550	50,363,535	17.8	449,108,661	.63
1919									
California	30	60	29,483,543	10,902,253	40,385,796	5,744,867	14.2	39,647,251	1.02
Illinois	42	93	6,397,018		6,059,828	1,115,083	18.4	3,160,907	1.92
Kansas	10	13	1,382,367	1,901,483	3,283,850	620,876	18.9	10,432,079	.31
Kentucky	7	9	150,184	4,986,142	5,136,326	1,144,746	22.3	20,216,945	.25
Louisiana	12	23	6,397,018	3,666,007	10,063,025	1,667,275	16.6	26,383,936	.38
New York	6	6	457,985		457,985	84,083	18.4	237,241	1.93
Ohio	35	59	2,366,407	6,434,554	8,800,961	1,963,763	22.3	43,609,762	.20
Oklahoma	161	329	175,796,157	14,198,881	189,995,038	32,564,532	17.1	100,776,135	1.89
Pennsylvania	241	343	11,683,744	8,599,592	20,283,336	4,407,318	21.7	56,280,578	.36
Texas	15	24	6,609,048	2,727,389	9,336,437	1,772,503	19.0	8,732,133	1.07
West Virginia	89	227	15,795,423	36,354,622	52,150,045	12,179,638	23.4	167,239,089	.31
Wyoming	3	5	4,978,443	602,156	5,580,599	931,722	16.7	3,687,907	1.51
Total 1919	611	1,191	261,157,587	90,377,439	351,535,026	64,196,763	18.3	480,403,963	.73
1920									
California	30	70	35,347,691	12,860,285	48,207,976	8,323,819	17.3	43,772,395	1.10
Illinois	38	92	6,054,916		6,054,916	1,307,980	21.6	2,889,334	2.10
Kansas	8	10	1,574,482	2,756,266	4,330,748	828,887	19.1	11,597,340	.37
Kentucky	6	9	182,927	4,314,393	4,497,320	1,071,628	23.8	18,939,285	.24
Louisiana	14	31	6,077,093	4,532,536	10,609,629	1,712,613	16.1	37,754,043	.28
New York	4	4	411,078		411,078	75,576	18.4	162,463	2.53
Ohio	31	59	2,294,996	7,720,642	10,015,638	2,194,558	21.9	40,215,329	.25
Oklahoma	141	315	163,913,791	14,943,138	178,856,929	31,334,493	17.5	85,167,518	2.10
Pennsylvania	207	306	10,981,461	10,169,674	21,151,135	4,382,380	20.7	60,951,697	.35
Texas	20	42	30,144,880	2,811,148	32,956,028	5,770,809	17.5	15,852,213	2.08
West Virginia	74	211	15,972,833	42,968,655	58,941,488	13,049,551	22.1	174,320,058	.34
Wyoming	4	5	8,175,825	535,212	8,711,037	1,735,828	19.9	4,809,277	1.81
Total 1920	576	1,154	281,131,973	103,611,949	384,743,922	71,788,122	18.7	496,430,952	.73
1921									
California	29	73	36,947,374	21,273,124	58,220,498	9,874,594	17.0	55,650,328	1.05
Illinois	34	90	7,533,647		7,536,073	1,101,227	14.6	3,102,246	2.43
Kansas	9	11	1,504,372	2,082,957	3,587,329	565,408	15.8	7,784,339	.46
Kentucky	8	9	196,728	4,045,210	4,241,938	834,983	19.7	16,520,224	.26
Louisiana	13	26	7,078,748	8,261,626	15,340,374	1,812,268	11.8	45,050,122	.34
New York	4	4	366,240		366,240	52,108	14.2	203,025	1.80
Ohio	27	48	1,642,813	7,457,084	9,099,897	1,546,551	17.0	35,888,504	.25
Oklahoma	123	280	165,740,022	19,600,720	185,340,742	22,066,014	11.9	88,380,173	2.10
Pennsylvania	170	264	11,558,508	8,297,865	19,856,373	3,354,233	16.9	46,336,174	.43
Texas	24	65	68,492,568	8,648,633	77,141,201	9,118,420	11.8	26,460,805	2.92
West Virginia	66	181	16,788,069	37,857,984	54,646,053	9,889,861	18.1	135,161,821	.40
Wyoming	6	7	14,495,141	62,543	14,557,684	1,599,591	11.0	4,559,639	3.19
Total 1921	458	1,056	332,344,230	117,590,172	449,934,402	861,815,258	18.7	479,618,194	.94

Note: Up to 1922, drip gasoline was included in absorption, which accounts for the large production by absorption method noted in Kentucky, Ohio and West Virginia.

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PROGRESS IN NATURAL GASOLINE INDUSTRY

NATURAL GASOLINE STATISTICS COVERING THE UNITED STATES

1911 - 1925 BY STATES

(No statistics available prior to 1911)

1922

			Raw (Unblended Gasoline Produced						Value		Estimated quantity of natural gas treated	
	No. of Operators	No. of Plants	Compression	Absorption	Combination (Compression and Absorption)	Charcoal	Drip	Total Production	In Dollars	Avg. in Cents Per Gal.	M cubic feet	Avg. yield per M cut. ft. (Gals.)
Arkansas	1	1	.....	.....	4,289,000	.....	.....	4,288,955	$ 629,491	14.7	1,193,737	3.59
California	31	77	22,558,000	23,958,000	20,314,000	.....	290,000	67,119,700	11,868,152	17.7	61,995,487	1.08
Illinois	32	78	7,752,000	.....	.....	.....	8,000	7,760,011	1,181,797	15.2	3,231,487	2.40
Kansas	6	8	909,000	1,928,000	.....	.....	19,000	2,855,573	435,056	15.2	8,187,788	.35
Kentucky	6	8	561,000	4,644,000	.....	.....	.....	5,204,883	925,810	17.8	18,123,512	.29
Louisiana	15	26	8,998,000	13,016,000	6,925,000	.....	467,000	29,406,282	4,112,655	14.0	47,143,567	.62
New York	4	4	281,000	225,000	.....	.....	.....	506,200	61,415	12.1	1,271,591	.40
Ohio	25	41	1,334,000	7,253,000	.....	.....	13,000	8,600,296	1,300,929	15.1	37,137,163	.23
Oklahoma	103	267	137,712,000	41,335,000	9,688,000	.....	669,000	189,403,670	24,914,048	13.2	94,799,953	2.00
Pennsylvania	135	195	9,116,000	9,345,000	.....	.....	57,000	18,518,131	3,144,545	17.0	51,328,721	.36
Texas	24	56	62,794,000	11,810,000	20,616,000	.....	185,000	95,405,483	12,114,952	12.7	51,243,411	1.86
West Virginia	59	151	12,591,000	41,090,000	2,906,000	.....	209,000	56,795,713	9,770,884	17.2	163,138,713	.35
Wyoming	4	5	19,869,000	98,000	.....	.....	.....	19,967,103	2,251,329	11.3	6,344,245	3.15
Total 1922	402	917	284,475,000	154,702,000	64,738,000	.....	1,917,000	505,832,000	$72,711,000	14.4	545,139,000	.90

			Raw (unblended) Gasoline Produced					Value		Estimated quantity of Nat. gas treated	
State	No. of Operators	No. of Plants	Compression	Absorption including combination absorption with compression and charcoal processes	Charcoal	Drip	Total Production	In Dollars	Avg. Per Gal.	M cubic feet	Avg. yield per M cu. ft. (Gals.)
						1923					
Arkansas	4	7	.....	16,089,000	.....	94,000	16,183,000	$1,916,000	11.8	3,975	4.1
California	57	119	14,937,000	158,392,000	.....	.....	173,329,000	16,564,000	9.6	211,409	.8
Illinois	30	86	7,355,000	.....	.....	1,000	7,356,000	851,000	11.6	3,207	2.3
Kansas	7	13	4,459,000	4,301,000	.....	15,000	8,775,000	690,000	7.9	10,843	.8
Kentucky	9	11	462,000	6,603,000	536,000	.....	7,601,000	1,067,000	14.0	22,925	.3
Louisiana	25	35	9,317,000	30,906,000	497,000	.....	40,720,000	3,484,000	8.6	87,944	.5
New York	5	5	315,000	93,000	.....	.....	408,000	44,000	10.8	640	.6
Ohio	25	44	1,251,000	8,777,000	.....	7,000	10,035,000	1,446,000	14.4	39,805	.3
Oklahoma	108	279	138,455,000	130,991,000	.....	803,000	270,249,000	23,012,000	8.5	136,563	2.0
Pennsylvania	127	196	7,943,000	10,912,000	204,000	73,000	19,132,000	2,560,000	13.4	55,238	.3
Texas	48	100	80,033,000	97,703,000	.....	29,000	177,765,000	14,752,000	8.3	113,733	1.6
West Virginia	58	162	8,627,000	53,278,000	1,186,000	290,000	63,381,000	8,890,000	14.0	164,906	.4
Wyoming	8	10	17,718,000	3,474,000	.....	100,000	21,292,000	1,992,000	9.4	24,523	.9
Total 1923	455	1,067	290,872,000	521,519,000	2,423,000	1,412,000	816,226,000	$77,268,000	9.5	875,711	.9
						1924					
Arkansas	5	9	.....	17,533,000	.....	.....	17,533,000	$1,784,000	10.2	3,243	5.4
California	61	140	13,520,000	219,059,000	.....	.....	232,579,000	22,690,000	9.8	217,445	1.1
Illinois	29	85	9,089,000	.....	.....	2,000	9,091,000	795,000	8.7	3,451	2.6
Kansas	8	14	614,000	11,042,000	.....	2,000	11,658,000	913,000	7.8	15,796	.7
Kentucky	8	10	1,128,000	5,182,000	964,000	.....	7,274,000	769,000	10.6	24,618	.3
Louisiana	33	45	7,105,000	40,952,000	Included under combination	41,000	48,098,000	3,887,000	8.1	136,448	.4
New York	5	5	333,000	144,000	.....	.....	477,000	50,000	10.5	381	1.3
Ohio	26	47	1,268,000	8,170,000	Included under combination	5,000	9,443,000	1,148,000	12.2	38,865	.2
Oklahoma	108	281	117,424,000	183,128,000	.....	510,000	301,062,000	23,338,000	7.8	172,111	1.7
Pennsylvania	127	191	7,315,000	10,716,000	1,076,000	147,000	19,254,000	2,266,000	11.8	63,104	.3
Texas	44	106	66,995,000	119,478,000	.....	98,000	186,571,000	14,460,000	7.8	148,554	1.3
West Virginia	56	152	12,968,000	46,856,000	1,383,000	342,000	61,549,000	7,154,000	11.6	160,007	.4
Wyoming	8	11	20,135,000	9,059,000	.....	78,000	29,272,000	2,979,000	10.2	32,253	.9
Total 1924	457	1,096	257,894,000	670,678,000	4,064,000	1,225,000	933,861,000	$82,233,000	8.8	1,016,276	.9

Production Statistics only Available for 1925:

1925

	1925	Jan.-Feb., 1926
New York, Pennsylvania, East Ohio, West Virginia	94,200,000	21,300,000
West Ohio, Indiana, Kentucky, Illinois	21,500,000	3,500,000
Oklahoma and Kansas	403,800,000	75,000,000
Texas	184,700,000	33,900,000
Louisiana and Arkansas	64,800,000	11,300,000
Rocky Mountain	32,700,000	4,900,000
California	303,200,000	56,100,000
Total	1,104,900,000	206,000,000

CAMDEN, N. J.—National Gas & Oil Co. which started in business on Dec. 21, 1925 as a co-partnership, opened a drive-in service station and office here in January and is planning to build additional stations when advantageous sites can be located.

C. A. Goldsmith is president, and J. S. Montague, who was formerly general manager and sales manager of Independent Pennsylvania Oil Co., Camden, is secretary and treasurer.

Dow Tells Commission High Rates Will Kill Golden-Egg Layer

WASHINGTON, May 1

A FABLE-KILLING argument against any increase in the freight rates on petroleum and its products in the territory west of the Mississippi River has been presented to the Interstate Commerce Commission by Fayette B. Dow, attorney for the Rate Structure Committee of the American Petroleum Institute and 25 refiners in the Mid-Continent field.

Neither the Pacific coast nor the Rocky Mountain refiners were especially represented in the fight against the effort western railroads are making to bring about an increase in rates estimated all the way from five to 20 per cent. They are asking this advance because they are not earning 5.75 per cent on the value of their property, as suggested as a fair return for them by the legislation of 1920. Also they are making that move as a counter irritant for the Hoch-Smith resolution of the last session of congress directing the rate body to make an investigation to bring about lower rates on the products of agriculture.

Probably the most long lived and vigorous of the fables the railroads cherish, according to Mr. Dow's brief, is that they must have high rates on petroleum and its products because of the heavy empty movement of tank cars. Mr. Dow pointed out that the tank car moves fewer miles empty than the average freight car. Taking the figures put into the record in the hearings which have lasted for months, he pointed out that the railroads themselves showed that out of every 200-mile trip the average freight car is fully loaded only 78 miles and empty for 122 miles. The tank car, assuming that it never gets a return load, is fully loaded for 100 out of each 200-mile trip.

Another myth given a lethal blow is that the price of petroleum products is and has been high. Taking the gasoline tank wagon price of gasoline as the price in which the public is most interested, Mr. Dow showed by a graph that every minute since the beginning of 1913 that price has been less than the average price of all commodities. In the same period the graph also shows that several times the price of crude has been above the average of all commodities. The public, however, does not buy crude oil.

The graph also shows what, of course, is known to every man in the industry, that roughly speaking the price of gasoline goes up and down in harmony with the movements of crude but it does not have the high peaks crude makes. The high peak in crude was in 1920 when it shot above the average of all commodities.

While crude and all commodities reached a sharp high point in that year the tank wagon price of gasoline also attained a peak but an exceedingly modest one in comparison with either the average of all commodities or of crude.

Throughout his brief Mr. Dow makes an effort to show the railroads that it would not be in their interest to increase rates on petroleum products because the transportation of them is a desirable business for the carriers and for the further reason that, the petroleum industry has a public reputation for prosperity, due largely to conditions which prevailed in earlier years and to the success of a few companies.

"These conditions have not prevailed in recent years," he said. "If the investment for the entire industry could be taken in the aggregate as the railroads aggregate their investment accounts, the results would show that the industry, as a whole, has operated at a loss since the deflation of 1921." Mr. Dow pointed out what the discovery of a new pool or a series of new pools does to the economic situation so far as it affects the industry, changing a substantial profit into a staggering loss, all of which, of course, is known to the industry but not to the rate regulating body, except in a hazy way.

What has been said heretofore is taken from the brief in behalf of the Institute. In the brief for the Mid-Continent refiners, Mr. Dow laid down the proposition that rates on petroleum and its products should not be increased if an increase is not in the carriers' own interest which he contends it is not. He said the Mid-Continent refiners were not economically in a position to bear the burden of increased transportation costs, its intensely competitive efforts leaving it a narrow margin on which to work. He pointed out that the petroleum traffic on the railroads is not increasing as rapidly as consumption. In other words, the railroads are forcing a desirable traffic to seek other methods of transportation because their rates are too high, pointing out that the coastwise vessel traffic increased from 12,300,000 long tons in 1922 to 19,300,000 long tons in 1924 and that more than 33,000,000 tons find their way into consumption without the aid of rail transportation.

Offer Week-End Bargain Specials On Gasoline and Oil

PHILADELPHIA, PA.

BARGAIN specials ,making the retail price of gasoline as low as 12 cents without the tax, are serving to aggravate conditions in the gasoline market in Philadelphia. Concessions of one kind or another are pretty generally offered by most of the big companies, including rents for locations for retailers, painting of properties, and giving away signs.

Cut rate dealers display their prices prominently, while the oil company stations and dealers who are holding to the price, or somewhat near it, oftentimes have no prices posted.

As a week-end offering, Samuel Bros. cut rate accessory dealers with three stores, play up in their newspaper advertising, gasoline for Friday and Saturday only at 12 cents. This price applies only at their newest location to build up trade there.

The top-liner in another list of cut rate offerings by the same concern recently was a five-gallon can of medium motor oil for $1.66. The can bore no oil company brand and the dealers would not say where they purchased it. A can of cup grease was listed in the same group of bargains for 15 cents. Auto soap was 19 cents a can.

The Pep Auto Supply Co.—the Pep Boys, Manny, Moe and Jack—sell a ticket good for 50 gallons of gasoline for $8.50 cash in advance. One dollar of this is the 2-cent gasoline tax, making the price of gasoline 15 cents. The present published tank wagon market is 17 cents, and the full retail price 20 cents without the tax. The ticket carries the purchaser's signature and is not transferable. These and other cut rate dealers in gasoline make no bones about their retail prices being at cost to them or even below in some cases. Their gasoline sales are feeders to get motorists to their places of business in the hopes of selling them other goods on which there is more profit.

Curb pumps are allowed in Philadelphia and the great part of the gasoline sold is put out through them. The Atlantic Refining Co. maintains very attractive stations of its own distinctive architecture. The Sun Oil Co. maintains some stations. Those of other companies are not particularly noticeable as you drive around.

In place of drive-in stations at good corners are nests of curb pumps, even downtown. The pumps themselves stand just inside the sidewalk from the street side, and each pump frequently has two outlets at the curb. Some corners will have 15 to 20 such outlets along both sides of the street, maybe run by three or four different concerns, with that many different kinds of gasoline.

The Independent emblem of the National Petroleum Marketers Association is displayed on billboards by the Intercity Oil Co., of which J. Shlifer is head. Because of the intense competition for the big industrial accounts, Mr. Shlifer has passed these up and gone after the retail dealers, picking men who are good merchandisers. He also handles a benzol blend put out by Sherwood Bros., known as Betholine. This has a ready sale at 5 cents over the general grade of motor fuel.

If you want to treat your "Cut Oil" and "Tank Bottoms" at Minimum Cost

—you owe it to yourself to investigate these statements about the TRET-O-LITE process:

INSTALLATION COST is *by far* the lowest known, as materials already on the lease are usually used. *No* heavy investment, which may stand idle when flush production ceases or wells stop cutting.

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A. P. I. Belt Specifications Tentative And Will Be Discussed Further

By A. F. Hinton
N. P. N. Staff Writer

TULSA, April 30

AT the Los Angeles meeting of the American Petroleum Institute last January, the special committee on standardization of belting for oil country use adopted tentative specifications for the manufacture of the various types of belting, together with recommendations for the care and usage of the material in the field. These specifications and recommendations were embodied in the report made by A. H. Riney, of the Phillips Petroleum Co., Bartlesville, Okla., national chairman of the belting committee.

In his report, the chairman sets forth the tentative specifications and recommendations for the following types of belting:—leather, impregnated stitched cotton fabric (other than stitched rubber and balata), solid woven hair, solid woven cotton, balata, and rubber. He calls attention to the fact that the fatigue tests mentioned in the specifications have not been completed and feels that more work must be done along this line of research in order to develop definite specifications for a fatigue test.

The committee suggests that oil company purchasing agents and engineers use the tentative A. P. I. belt specifications during this year in order that advantages or disadvantages be brought out through actual practice, in the hope that final adoption may be accomplished by the next annual meeting of the Institute. Progress along these lines will be discussed at a meeting of the committee during the general standardization conference to be held in Colorado Springs, June 15 to 17.

Misused Belts Fail

IN the letter accompanying his report, chairman Riney said:—"Very few belts which are properly installed are actually worn out. They fail through misuse or abuse, or from using a belt not properly selected for the purpose for which it is used. It is recommended (to oil companies) that one man in each organization be designated to check up and follow up belts and their usage. Measuring the load on wells is suggested. Pulley diameters on the drive should be as large as possible. If loads are excessive, jack shafts are recommended. The pumping committee has standardized on 14, 16, and 18 inch width of pulley faces, and the rig and derrick committee has standardized on 11-foot band wheels and 14, 16, and 18 inch faces to accommodate 12, 14, and 16 inch belts. They also specify 6-inch clearance under the bandwheel.

"A complete description of all belts and the cost of same in the past year" the letter goes on, "was obtained from 90 representatives of oil companies operating in the United States. It was then assumed that the relation between this expenditure and the total expenditure in the United States for belting would be approximately the same as the relation between the oil production of this group and the total oil production in the United States. This method indicated that $5,000,000 was expended for belting during 1925. The committee estimates that through better care and proper usage of belting and from the benefits and improvements which will be derived through these specifications and the work of the committee, the life of the belt should be increased at least 20 per cent. This, in other words, means that the saving to the oil industry should be about $1,000,000 per year on belting alone."

In its general recommendations for the care and usage of belting in the oil fields, the committee makes practical suggestions that should be of interest to all belt users. These are:—

(1) Keep belting tightly rolled until ready to apply.

(2) Cut ends of belt square with edges.

(3) Do not nail belt to bandwheel or join belt off pulley and force it in place. Use belt stretchers.

(4) Do not use resin or other sticky belt dressing. If belt requires dressing, use manufacturer's recommendations.

(5) Keep face of pulley and bandwheel free from accumulation of belt dressing and other foreign matter.

(6) Use steel bolts for clamps instead of malleable iron.

(7) See manufacturer's tables for horsepower to be transmitted by belt.

(8) For all belts except leather and rubber, spread belt material for bolt holes instead of punching. For rubber and leather use a punch 1/8-inch smaller than the bolt.

(9) Store all belts in as cool a place as possible.

In addition to these general recommendations, the committee also makes special suggestions for the care of different kinds of belts. For leather belts, it gives the following order of preference for methods of joining belts:—(1) Endless, (2) leather lacing, (3) Crescent plates, (4) Alligator fasteners. For belt dressing, it suggests use of manufacturer's recommendations, but says that if necessary use neatsfoot oil on outside of belt. For initial tension, it is recommended that 1/8-inch per foot of length be cut from belt before applying.

For initial tension of stitched cotton fabric belts, the committee recommends that 1/4-inch per foot be cut from belt before applying. For woven hair belts, the committee recommends that a liquid dressing or oil as recommended by the manufacturer be applied when removing the belt from service. For balata belts, 3/4-inch for each 10 feet of belting should be cut before applying. For dressing for this type of belt, use castor oil very sparingly. For rubber belts, cut 3/32-inch to 1/8-inch per foot from belt before applying. Use steel tape measurement for belt length. Use vegetable castor oil sparingly on the pulley side for dressing this type of belt.

Following are the committee's final recommendations for tentative working specifications for oil country belting, as adopted by the Board of Directors of the American Petroleum Institute:—

A. P. I. SPECIFICATIONS FOR LEATHER BELTING

(1) Belting of this class shall consist of first quality oak tanned leather or equal, free from undesirable defects of material and workmanship; it shall be uniform in character and unadulterated with injurious compounds of any kind, and shall be suitable for general oil field usage.

(2) No belting strips shall be longer than 54 inches or less than 36 inches, including the lap, except in double belts where 1/8 of the strips may be between 20 and 30 inches long, if none are inserted adjacent to each other. All laps shall be at right angles to the edge of the belt and shall not be shorter than 3 inches. No laps in double belting may be closer than 8 inches, all laps running in the same direction throughout the belt.

(3) All belts shall be purchased on the basis of lineal feet for different widths in single, double, or triple thicknesses without regard to weight.

Physical Tests

(4) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of tests, relative degree of humidity 65%.

Sampling

Samples the full width and thickness of the belt shall be taken of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference

lines marked upon it 8 inches apart and at equal distances from the ends.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurement made on a true scale with inches graduated in tenths, the per cent of elongation to be within the following limits:

Not less than 11% nor more than 24% at 700 pound load for single belts.

Not less than 11% nor more than 24% at 1300 pound load for double belts.

(d) The trend of the elongation curve shall be uniform and conform to the proposed typical graph.

Ultimate Tensile Strength

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength which shall be—

Not less than 700 pounds per inch of width for single belts.

Not less than 1300 pounds per inch of width for double belts.

Fatigue Test

This test will be described at some future date.

Cracking Test

A sample strip of belting, when bent 180 degrees around a one inch circular mandrel, grain side out, shall not show any visible cracks.

Piping Test

A sample strip of belting, when bent 180 degrees around a three inch mandrel with grain surface inside, shall not show signs of coarse wrinkling or piping on the grain surface.

(5) The width of the belt shall conform to that specified within the following tolerances:

Width up to 8 inches inclusive, 1/16 inch plus or minus.

All widths over 8 inches, ⅛ inch plus or minus.

The thickness of the belt shall not vary more than 3/64 inch from the thinnest to the thickest portion of the belt.

(6) Belting shall bear the name of the manufacturer, the month and year of manufacture and trade name of the belt. Workmanship shall be in accordance with best manufacturing practices and belt shall give good service under normal working conditions, and temperatures ten degrees above or below the maximum or minimum working temperatures, respectively.

(7) The purchaser may make the tests governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(8) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

(9) Any length of belting which fails to meet the requirements of these specifications may be rejected.

IMPREGNATED STITCHED COTTON FABRIC BELTING

Other Than Stitched Rubber and Balata Belting

(1) Belting of this class shall consist of plies of uniformly woven duck, suitably stitched together with lock stitching. The stitches shall be interlocked midway between the surfaces of the belting.

(2) The finished belts shall be impregnated with a special compound which will lubricate the internal fibers of the belt, will not be affected by extreme of temperature and will not bleed, oxidize, deteriorate or harden by continued exposure to the atmosphere.

Physical Tests

(3) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of the tests, relative degree of humidity 65%.

Sampling

Samples the full width and thickness of the belt shall be taken of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference lines marked upon it 8 inches apart and at equal distance from the ends, as shown in a diagram on graphic sheet.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurement made on a true scale with inches graduated in tenths, the per cent of elongation to be within the following limits:

Pounds Tension per inch width	Per Cent of Elongation Maximum	Minimum
400	6	4
800	10	8
1200	13	11
1600	15	13

(d) The trend of the elongation curve shall be uniform.

Ultimate Strength Test

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength which shall not be less than 300 pounds per inch per ply up to and including 7 ply and 275 pounds per inch per ply above 7 ply.

Fatigue Test

This test will be described at some future time.

(4) The width of belting shall conform to that specified within the following tolerance:

Width up to 12 inches inclusive, 3/16 inches plus or minus.

Over 12 inches to 24 inches inclusive ¼ inch plus or minus.

Workmanship shall be in accordance with best manufacturing practices and belt shall give good service under normal working conditions and temperatures ten degrees above or below maximum or minimum working temperatures, respectively.

(5) Belting shall bear the name of the manufacturer, month and year of manufacture, and trade name of the belt.

(6) The purchaser may make the tests governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(7) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

(8) Any length of belting which fails to meet the requirements of these specifications may be rejected.

A. P. I. SPECIFICATIONS FOR HAIR BELTING

(1) Hair belts shall be made in three principal thicknesses designated as single, double and triple.

(a) Single belts shall have a nominal thickness of one-quarter inch.

(b) Double belts shall have a nominal thickness of five-sixteenths of an inch.

(c) Triple belts shall have a nominal thickness of three-eighths of an inch.

(2) Belts of uniformly greater thickness than ⅜ of an inch shall be named and stamped as special belts.

(3) The belting shall be evenly and firmly woven and as free from such defects as foreign matter, knots, lumps and irregularities of twist as is consistent with the best manufacturing practice.

(4) The finished belts shall be impregnated with a special compound which will lubricate the internal fibers of the belt, will not be affected by extremes of temperature and will not bleed, oxidize, deteriorate or harden by continued exposure to the atmosphere.

Physical Tests

(5) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of the tests, relative degree of humidity 65%.

Sampling

Samples the full width and thickness of the belt shall be taken of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference lines marked upon it 8 inches apart and at equal distance from the ends.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurement made on a true scale with inches graduated in tenths, the percent of elongation to be made within the following limits:

Pounds Tension per 1 inch width	Per Cent of Elongation Maximum	Minimum
400	7.5	5.5
800	13	11
1200	17	15
1600	19.5	17.5

(d) The trend of the elongation curve

shall be uniform.

Ultimate Strength Test

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength which shall not be less than
1200 pounds per inch for single's.
1300 pounds per inch for double's.
1400 pounds per inch for triple's

Fatigue Test

This test will be described at some future time.

(6) The width of belting shall conform to that specified within the following tolerance:

Width up to 12 inches inclusive, 3/16 inch plus or minus
Over 12 to 24 inches inclusive, ¼ inch plus or minus.

(7) Belting shall bear the name of the manufacturer, month and year of manufacture and trade name of the belt. Workmanship shall be in accordance with best manufacturing practices and belt shall give good service under normal working conditions, and temperatures ten degrees above or below the maximum or minimum working temperatures, respectively.

(8) The purchaser may make the tests governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(9) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

(10) Any length of belting which fails to meet the requirements of these specifications may be rejected.

A. P. I. SPECIFICATIONS FOR SOLID WOVEN COTTON BELTING

(1) Belts shall be made in three principal thicknesses designated as single, double and triple.

(a) Single belts shall have a nominal thickness of one-quarter inch.

(b) Double belts shall have a nominal thickness of five-sixteenths of an inch.

(c) Triple belts shall have a nominal thickness of three-eighths of an inch.

(2) Belts of uniformly greater thickness than 3/8 of an inch shall be named and stamped as special belts.

(3) The belting shall be evenly and firmly woven and as free from such defects as foreign matter, knots, lumps and irregularities of twist as is consistent with the best manufacturing practice.

(4) The finished belts shall be impregnated with a special compound which will lubricate the internal fibers of the belt, will not be affected by extremes of temperatures and will not bleed, oxidize, deteriorate or harden by continued exposure to the atmosphere.

Physical Tests

(5) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of tests, relative humidity 65%.

Sampling

Samples the full width and thickness of the belt shall be taken from the roll of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference lines marked upon it 8 inches apart and at equal distance from the ends.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurement made on a true scale with inches graduated in tenths, the percent of elongation to be within the following limits:

Pounds Tension per 1 inch width	Per Cent of Elongation Maximum	Minimum
400	8	6
800	11	9
1200	13	11
1600	15	13

(d) The trend of the elongation curve shall be uniform and conform to the following graph:

Ultimate Strength Test

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength which shall not be less than 1200 pounds per inch width for single's. 2000 pounds per inch width for double's. 2500 pounds per inch width for triple's.

Fatigue Test

This test will be described at some future time.

(6) The width of belting shall conform to that specified within the following tolerance:

Width up to 12 inches inclusive, 3/16 inch plus or minus.
Over 12 inches to 24 inclusive, ¼ inch plus or minus.

(7) Belting shall bear the name of the manufacturer, month and year of manufacture and trade name of the belt. Workmanship shall be in accordance with best manufacturing practices and belt shall give good service under normal working conditions, and temperatures ten degrees above or below maximum or minimum working temperatures, respectively.

(8) The purchaser may make the tests governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(9) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the test, the manufacturer may make claim for a rehearing within that time.

(10) Any length of belting which fails to meet the requirements of these specifications may be rejected.

A. P. I. SPECIFICATIONS FOR BALATA BELTING

(1) Balata belting shall consist of plies of uniformly woven duck, thoroughly impregnated with genuine Balata gum solution and pressed together uniformly.

(2) Belts 500 feet or less in length must be made without any transverse splices. Belts over 500 feet in length, transverse splices used shall be diagonal and no such splices in adjacent plies shall be placed nearer than fifteen feet to each other.

Physical Tests

(3) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of tests, relative humidity 65 per cent.

Sampling

Samples the full width and thickness of the belt shall be taken of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference lines marked upon it 8 inches apart and at equal distance from the ends.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurements made on a true scale with inches graduated in tenths, the per cent of elongation to be within the following limits:

Pounds Tension per 1 inch width	Per Cent of Elongation Maximum	Minimum
400	7	5
800	12	10
1200	15	13
1600	16.5	14.5

(d) The trend of the elongation curve shall be uniform.

Ultimate Strength Test

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength, which shall not be less than 350 pounds per inch per ply.

Friction Test

Friction specimens shall be taken longitudinally of the sample of belting and shall be tested to determine the adhesion between the plies. The adhesion between the plies shall be such that a weight not less than ten (10) pounds will cause separation of plies at a rate not greater than one inch per minute when separated at an angle of 180 degrees on a strip of belting one inch wide. The adhesion between the plies shall be reasonably uniform and within the test limits throughout the thickness of the belt.

(4) The width of belting shall conform to that specified within the following tolerance:

Width up to 12 inches inclusive, 3/16 inch plus or minus.
Over 12 inches to 24 inches inclusive ¼ inch plus or minus.

(5) Belting shall bear the name of the manufacturer, month and year of manufacture, trade name of the belt. Work-

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A. H. Rogers, *Ass't Sec'y*

manship shall be in accordance with best manufacturing practices, and belt shall give good service under normal working conditions and temperatures ten degrees above or below maximum or minimum work temperatures, respectively.

(6) The purchaser may make the tests governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(7) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

(8) Any length of belting which fails to meet the requirements of these specifications may be rejected.

A. P. I. SPECIFICATIONS FOR RUBBER BELTING

(1) Belting of this class shall consist of plies of uniformly woven duck, frictioned with a rubber compound and vulcanized together in a uniform manner.

(2) Belts 500 feet or less in length must be made without any transverse splices. Belts over 500 feet in length, transverse splices used shall be diagonal and no such splices in adjacent plies shall be placed nearer than fifteen feet to each other.

Physical Tests

(3) Tests shall be made in an atmospheric temperature of from 70 to 85° F. The samples shall be kept in a temperature between these limits at least four hours previous to the time of tests, relative humidity 65 per cent.

Sampling

Samples the full width and thickness of the belt shall be taken of each lot of belting.

Elongation Test

(a) Test specimen twenty inches in length shall have transverse reference lines marked upon it eight inches apart and at equal distance from the ends.

(b) Specimen shall then be tested in a tension testing machine and the rate of separation of the jaws shall be 2 inches per minute for each pull.

(c) The elongation shall be taken at the following pounds tension by means of a divider and the measurement made on a true scale with inches graduated in tenths, the per cent of elongation to be within the following limits:

Pounds Tension per 1 inch width	Per Cent of Elongation Maximum	Minimum
400	6	4
800	10	8
1200	13	11
1600	15	13

(d) The trend of the elongation curve shall be uniform and conform to the following graph:

Ultimate Strength Test

The elongation test described above shall continue to the breaking point in order to obtain the ultimate tensile strength, which shall not be less than 340 pounds per inch per ply.

Fatigue Test

This test will be described at some future time.

Friction Test

Friction specimens shall be taken longitudinally of the sample of belting and shall be tested to determine the adhesion between the plies. The adhesion between the plies shall be such that a weight not less than eighteen (18) pounds will cause separation of plies at a rate not greater than one inch per minute when separated at an angle of 180 degrees on a strip of belting one inch wide. The adhesion between the plies shall be reasonably uniform throughout the thickness of the belt.

(4) The width of belting shall conform to that specified within the following tolerance:

Width up to 12 inches inclusive, 3/16 inch plus or minus.
Over 12 inches to 24 inches inclusive ¼ inch plus or minus.

(5) Belting shall bear the name of the manufacturer, month and year of manufacture and trade name of the belt. Workmanship shall be in accordance with best manufacturing practices, and belt shall give good service under normal working conditions and temperatures ten degrees above or below maximum or minimum working temperatures, respectively.

(6) The purchaser may make the test governing the acceptance or rejection of the belting in his own laboratory or elsewhere.

(7) Samples of rejected belting shall be preserved for thirty days from the date of test report. In case of dissatisfaction with the results of the test, the manufacturer may make claim for a rehearing within that time.

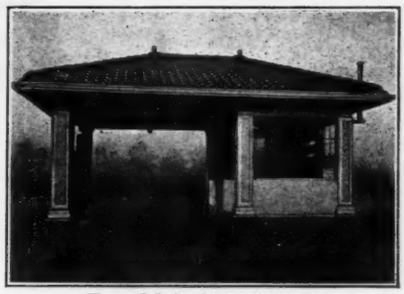
(8) Any length of belting which fails to meet the requirements of these specifications may be rejected.

S. O. California Reduces Accidents 19.5%

CLEVELAND, April 30.—The safety work of the Standard Oil Co. of California has shown concrete results, K. R. Kingsbury, president of the company, has reported to stockholders. He said:

"The Company's safety program has been successful. Each of the last four years has shown declining rate of accident frequency. The 1925 rate showed a 19.5 per cent decrease from the figures of 1924. During the "No Accident Campaign" held in April, the entire pipe line department and certain divisions of other departments, representing some 7,000 employes, went the entire month without a lost time accident. The asphalt cooper shop at Richmond refinery, with an average force of 62 employes, completed 887 days without a lost time accident."

MEDICAL LAKE, WASH.—H. Earl Clack Co., Spokane, Wash., has just completed a bulk plant here, of which J. M. Wilkes, retail merchant, is agent.



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of Southern Oil Corporation

at Sapulpa, Oklahoma, May 25, 1926

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Refineries Pipe Lines
Tank Cars Machinery
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the following oil properties of the Southern Oil Corporation free of liens and encumbrances.

***Yale Refinery*—fully equipped, 5500 bbls. capacity; 222,000 bbls. crude storage, well water plant and storage tanks. Good switching service; main buildings of brick.**

***Pipe Lines*—main and gathering, from Northwest Hominy thru Osage, Cleveland, Jennings, Yale, Drumright and Shamrock fields. Now in use; in good shape.**

***Filling Stations*—at Yale and Drumright; 3-story office and garage building, pipe line warehouse and goods at Drumright.**

***69 Tank Cars*—capacity 10,000—8,000**

***Walters Refinery*—fully equipped, 2000 bbls. capacity, one 55 M storage tank, 4 in line to Devol Station.**

Total main lines in Oklahoma:

25,970′	2″ pipe
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378,825′	4″ pipe

***Phone Lines*—following all main lines.**

***Cottages*— at Yale and Drumright and various pump stations.**

***Miscellaneous*—machinery and equipment.**

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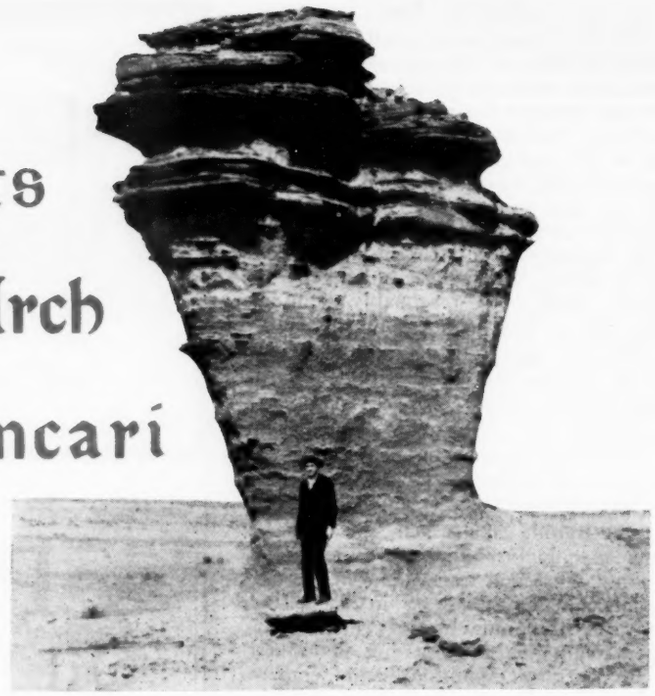
New Mexico Tests Indicate Amarillo Arch Extends to Tucumcari



By Paul Wagner
N. P. N. Staff Writer

TUCUMCARI, N. M., April 29

ARKOSIC, material similar to the granitic wash pay of the Texas Panhandle, has been found in some of the wildcat tests drilled in northeastern New Mexico, tending in part to prove the extension of the Amarillo arch through Hartley county, Texas, and westward past Tucumcari, N. M., with Tucumcari mountain possibly located near the axis of the uplift.

It is believed that arkose found in the No. 1 Woods test of the Olean Petroleum Co., in 9-13N-34E, Quay county, N. M., at approximately 3100 feet, lies down the north flank of the uplift. The Dripping Springs tests of the Standard Petroleum Co., in 25-13N-31E, which started lower in the geologic column than the Olean's well, had arkose at 2985 feet.

The Olean Petroleum Co.'s test, now controlled by the Prairie Oil & Gas Co., is still drilling at about 3450 feet; the Standard Petroleum Co.'s test was abandoned at 3016 feet, because of a bad hole that would not permit of drilling deeper.

Other tests in northeastern New Mexico that have picked up arkosic materials have in some instances found them in the Pennsylvanian rocks in what are believed to be definite horizons interbedded with the sands and shales of that age.

Where the Pennsylvanian is exposed along the mountain front to the west of this area, between Las Vegas and Albuquerque, many beds of arkosic sands are observed throughout the series. In a drilling well, cuttings from such horizons would have all the appearance of granitic material and it is believed that several tests have been abandoned because it was thought granite had been reached.

As a matter of fact the bit may have only penetrated one of these arkosic horizons, leaving untested deeper sands and shales possibly capable of producing oil under favorable structural conditions.

If the arkosic materials found in the Olean test near the town of Logan, and the Dripping Springs test are proved to be down the north bank of a westerly extension of the Amarillo arch there will have been developed an incentive to extend Panhandle wildcatting still farther in the general direction of Tucumcari.

Tests South of Uplift

THE McGee test in 27-10N-31E, drilled to 4013 feet and abandoned several years ago, is considered to be on the south side of such an arch and possibly down in the salt basin which extends southerly through a large part of west Texas and southeastern New Mexico.

Another test considered to be on the south side of the probable extension of the Amarillo arch is that drilled by the Spaulding Dome Oil Co. in the northeast corner of township 6N, range 25E.

In Hartley county, Texas, between the inferred extension of the arch into New Mexico and the present oil development northeast of Amarillo, the leasing of large blocks of acreage is now under way.

Humble Oil & Refining Co., which several years ago drilled into the granite on the Bravo dome, has re-entered the region with the acquisition of a 15,000-acre block centering around Sec. 64 of the Bravo sub-division, which lies down the north flank of the ridge from the company's earlier failure. This block is similarly north of dry holes drilled several years ago by the Benedum-Trees interests.

A test due to start on a block centering around Sec. 59, Block XR, northest of the town of Bravo, near the New Mexico-Texas line, is credited to the Amerada Petroleum Corp.

Marland Oil Co. of Texas has two blocks in Hartley county calling for the starting of test wells in 60 days. A 10,000-acre block is out of the James Shelton ranch, centering around the northwest corner of League 202. Another block totalling approximately 25,000 acres, comprises parts of the Reynolds and Collins ranches, with a location probably to be made in sec. 3, H&TC railway block 49. The Hartley county blocks are a little north of east of the Olean test, near Logan, on the New Mexico side of the state boundary.

Bell Ranch Being Tested

APPROXIMATELY 30 miles west of the Olean test the Marland Oil Co. of Colorado is down 3965 feet in the northwest of the southwest of 3-13N-29E, on the Bell ranch in San Miguel county. The Bell ranch well has as its objective the testing of the Pennsylvanian series beds, in which the first arkosic horizon was found at about 3750 feet.

The arkose in the Bell ranch test should not be confused with the granitic wash found in wells drilled along the north flank of the Amarillo arch. The test is located on one of a number of anticlinal structures mapped on the 490,000-acre ranch, which lies west of a regional syncline off the flank of the Sierra Grande uplift in northwestern Union county.

What relationship, if any, this regional syncline bears to the Amarillo arch is not definitely known. The regional syncline presumably plays out against the north flank of the inferred extension of the Amarillo arch somewhere to the southwest of Tucumcari. It has been

suggested that the formation of the west-east plunging anticlines found on the Bell ranch may have been influenced by this regional syncline.

An interesting sidelight bearing on the general area discussed is the controversy regarding the age of the so-called "Big Lime" now producing in Hutchinson and Carson counties, Texas. The Texas geologists, in bringing correlations from the east, determine this horizon as the Wichita-Albany of Lower Permian age. New Mexico geologists, on the other hand, taking their correlations eastward from the Rocky Mountains, dominate it as much older and possibly the equivalent of the Magdalena of Upper Pennsylvanian age.

Types of Topography Differ

THE topography westward from the present producing area in the Texas Panhandle combines that of the high plains with the broken terrain adjacent to the Canadian river until the edge of the Llano Estacado is reached along the Texas-New Mexico line. There a bold escarpment marks the eastern edge of an erosional plain stretching away to the mountain ranges of central New Mexico.

Isolated buttes, high mesas and deep-cut stream valleys are characteristic of the erosional plain. For the most part, the surface beds are of Triassic and Permian age, although some of the higher mesas and buttes are capped by the Wingate sandstone of Jurassic age and in the case of Tucumcari mountain the Dakota sandstone forms the capping.

A great part of this area has for its southern boundary the escarpment of the Llano Estacado, or staked plains, which here swings westward into New Mexico for a considerable distance before trending southerly along the eastern side of the Pecos river valley. The Llano Estacado is capped by caliche of Tertiary age, which effectually hides whatever structural evidence there may be in underlying rocks.

California Tax Measure Allows for Losses

CLEVELAND, May 1.—One of the chief complaints of oil companies against gasoline taxes is that no accounting is taken by law makers of the fact that gasoline is a highly volatile liquid and no allowance is made in tax laws for evaporation losses.

California provides for at least part of evaporation or other losses. It allows oil compnies to deduct 1 per cent for losses. In other words, tax figures reported by California represent really only 99 per cent of the actual volume of gasoline sold.

EXETER, NEB.—M. W. Dinneen & Son has installed a bulk station here in connection with its filling station.

He's President of Standard of N. Y.

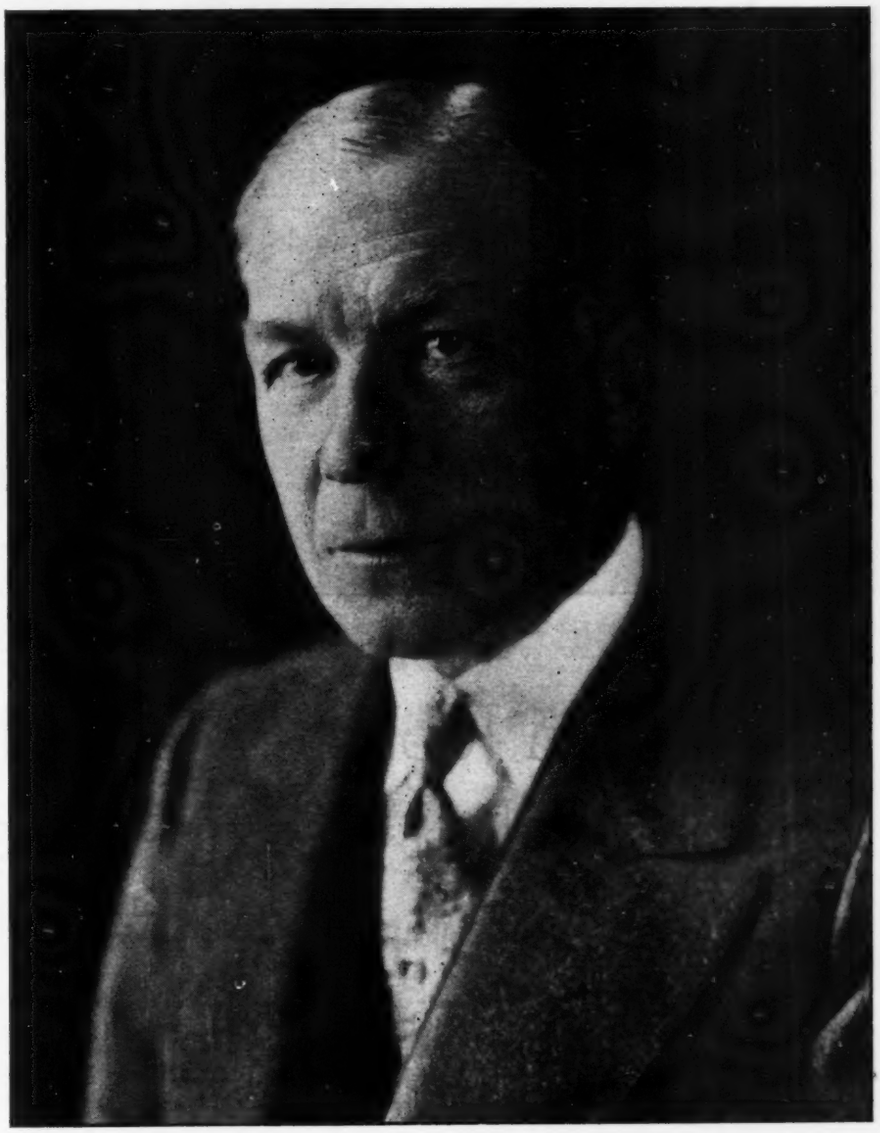


Photo by Underwood & Underwood

HERBERT L. PRATT

He is one of the leaders of the oil industry but is seen little in public. Mr. Pratt is president of the Standard Oil Co. of New York, the second largest oil organization in the United States and the third largest in the world. He directed the recent negotiations which resulted in the consolidation of the Standard of New York and the General Petroleum Corp. of California, which companies with the almost wholly owned Magnolia Petroleum Co. form an eminent petroleum organization.

Mr. Pratt seldom attends oil gatherings but his name is known to every man that has been in the oil business only a short time.

Oil is not the sole interest of Mr. Pratt. He is also deeply interested in Young America and is active in raising funds for the maintenance of the Playground and Recreation Association of America. He has made a generous contribution himself and has taken the responsibility for obtaining from New York City its part of the association's national budget for 1926.

He has written letters soliciting money from friends, in which he said: "I am convinced that proper provision for safe and wholesome play is one of our most pressing needs."

New Station on Lake Shore Road

GOWANDA, N. Y.—A new filling station was opened on May 1 at Derby, N. Y., on Lake Shore highway by the Highland Gasoline Station, handling gasoline of the Kendall Refining Co., Bradford, Pa., and motor oils supplied by E. L. Gayvert & Co., Gowanda. The new station is about 12 miles from Buffalo.

The rose tea garden will be conducted in connection with this station.

OLYPHANT, PA.—Supreme Oil & Service Co., with headquarters here, which started business early in 1925 is operating four stations. James B. Rosenfeld is secretary and general manager.

Hydraulic system for bulk and service stations is being used.

HOPKINSVILLE, KY.—Gulf Refining Co., Pittsburgh, Pa., has completed its bulk distributing station here.

Service station belonging to the L. V. White Co., at the edge of Kalamazoo, Mich., with the forest in the background. It is one of the company's best outlets, situated on a state highway, selling "Dixie Gas".

Michigan Jobbers May Sell One Brand Called "Dixie Gasoline"

By Ward K. Halbert
N. P. N. Staff Writer

CHICAGO, April 30

A PROPOSITION is being offered to a selected group of Independent jobbers in Michigan whereby all of them may sell gasoline under the same trade name and, without pooling their interests in any way, enjoy the benefits of a common brand and a uniform high standard of merchandise. The proposition is being offered by L. V. White, head of the L. V. White Co., Kalamazoo, who originated the idea.

The Independent Oil Men's Association in the state is not back of the program at all. James A. Gilmore, secretary of the state organization says the group will certainly offer no opposition to the movement but will not help it along, being wholly disinterested in the matter. "Mr. White is a member of the association," Gilmore says, "and his proposition will not interfere with the association's work, however, it is for a select crowd and not for all the jobbers in Michigan so the association will keep hands off."

Mr. White states that he is not trying to organize a group of small Independents into a co-operative clique. He is really "out gunning for big game" with his idea. He hopes that a score or more of the biggest and strongest Independents in the state may get together on the idea, and from an organization to blanket the state. He believes the tourist business in Michigan may be virtually cornered by any group of aggressive Independents who will do what it takes to get it.

According to Mr. White's plan, no fee will be exacted of anybody for membership. Joining the group depends entirely on an applicant's willingness and ability to live up to the few agreements into which the members will enter. Every member gets exclusive rights to the use of the common brand in his territory. First, he must define his territory, prove to the other members that he has that territory well covered with marketing outlets and agree not to infringe upon the territory of his fellows.

"Nobody is invited to join but good marketers," Mr. White says. "It is always unpleasant and almost impossible for a loosely organized bunch of business men to exercise discipline over one of their number. We can't get along and be interfering with each other about matters of private business. The best way is to admit companies in the first place who are good ethical marketers. We want men who are noted for giving good service, having good-looking stations and trucks, selling good merchandise at a profit and, in short, being good business men. And, to avoid friction, we want men whose territories do not overlap too much."

Idea a Year Old

THE "Mutual Brand" idea has been haunting L. V. White for a year or more. The first time it was presented in anything like concrete form was at the state association meeting in Detroit this last January. At that time it did not come up for discussion in open meeting. Mr. White simply talked the subject over with some other oil men of his own choosing and allowed them to go home and think it over. He is doing all the promoting himself letting the idea grow rather than pushing it.

It's progress since January is that Grimes & Madegan Oil Co. of Grand Rapids, and the Grand River Oil Co. of Redford, have entered with him into the program, helping to promote it. But these three companies have the lower border of Michigan—the motor entrance to the state—almost covered.

These early entrants into the movement are bearing the expense of the promotion. The White Co. in particular is offering something more than time and effort. Mr. White offers to the organization the free use of his trade mark "Dixie Gas" and his company's slogan, "The Power to Pass, That's Dixie Gas." Both originated with his company and

Shotwell BALL BEARING Pumps

Speedwell

Shotwell's New Sensation of the Chicago Show

The Only Gallon-per-second Visible Gasoline Pump in the World!

Read Every Word in this Telegraphic Description

This breath-taking surprise sprung at Chicago Show. Get the picture. A handsome Shotwell visible pump, five and ten-gallon size—stunning in appearance. MORE REASONABLE IN PRICE THAN ALL COMPETITION, and pumping gas at the rate of a gallon per second! Think of it! 5 gallons in 5 seconds! No other pump in the $100 field even half so fast. Easiest of operation of any pump that hands ever turned. Another Shotwell "Ball-Bearing" triumph. Up to high standard of Shotwell pumps already famous with thousands of users.

Elevate the speed of your visible service from the old one-gallon pump class.

Write or wire. Ask also for complete catalog of Shotwell visible and non-visible "Better Pumps at Better Prices".

Shotwell Pump and Tank Co.

Indianapolis, Ind.

Atlanta, Buffalo, Chicago, Cleveland, Columbus, Detroit, San Francisco, Lansing, Memphis, Milwaukee, New York, Philadelphia, St. Louis, Youngstown

Boston, Mass.

are copyrighted. There is no printed prospectus promoting the movement, but Mr. White's ideas nearly all appear in a letter he recently addressed to two or three prospective associates. In substance the letter said:

Claims for the Movement

"Here is a suggestion for the betterment of your business and mine. It is the State-wide adoption of the name 'Dixie' for gasoline and motor oil sold by Independents in Michigan. The state is a peninsula, a sort of little empire in itself. This has been influential in keeping price conditions in the state good. There has been comparatively little interference from outside price wars. The same brand name will help to unite us and be a valuable instrument to combat combined competition should it ever develop.

"The reason we suggest 'Dixie' is that it is short and easily remembered; it already has prestige in the southern and western parts of Michigan, and it is a word that is sure to strike summer tourists favorably. Nearly everybody knows the gasoline used in this section is a southern product and many of the tourists who come to Michigan in summer are southern people.

"The Slogan, 'The Power to Pass, That's Dixie Gas' has been subjected to all kinds of scientific tests by psychologists and advertising experts and has often been cited as an ideal slogan. It is a pleasing little rhyme and has a rhythm that fastens it in the customer's memory. Moreover, it contains the name of the product it is meant to advertise. The adoption of the Standard brand name costs nothing; the one stipulation is that the products sold under that name be uniform all over the state, matching item for item at every station."

Enumerated Advantages

MICHIGAN jobbers marketing under similar conditions, under the same state laws, to much the same kind of trade, can gain a great deal of gallonage through the use of a common trade name, Mr. White maintains. People are inclined to buy merchandise with a familiar name rather than something of an unheard of brand. "Dixie Gas" has the advantage of being already well-advertised in this section. The merchandising advantages of an extensively advertised and widely distributed product are well known. But there are other advantages that Mr. White points out.

"Surrounded by water as Michigan is, motor trucking and commercial traveling by automobile is largely limited to the borders of the state, he says. A group such as this one could meet almost any proposition (wholesale or retail) that the Standard Oil Co. may offer in the way of a quantity discount agreement. Any trucking concern or any group of traveling salesmen in Michigan could be served well by such a group of Independents.

"By selecting our own group as we mean to do, we could be perfectly safe in arranging an interchange of coupons. We could have a Central purchasing arrangement that would enable us to have quantity price on all such items of equipment as pump globes, uniforms for attendant and printed matter. It might prove economical to maintain a gasoline buying office in group 3. All might employ the same advertising agency and save a lot of money on newspaper cuts and syndicated ads. Besides, we could jointly employ the best advertising medium in the state where now none of us is situated to use the big state journals to the best advantage.

"Another rather important slant with reference to advertising is an idea which the jobbers of Wisconsin used at one time. We could jointly advertise in travel magazines, not advertising our wares but advertising Michigan as a good place to visit in the sumemr time. We could talk about our pleasures resorts and bring more and more tourists to the state every summer. With the right kind of advise on advertising our members could save thousands of dollars every year spent on worthless so-called advertising stunts.

"The use of a common emblem will have a tendency to improve our credit individually. The wide spread appearance of Dixie pump globes and poster panels and the advertisements in big newspapers is sure to add prestige to each local member of the group.

Mr. White says it is not his idea to push the spread of the "Dixie Gas" movement outside of Michigan but to limit it to well-known Independent dealers inside the state.

Stoddard Solvent for Dry Cleaning Explained by Cleaners' Assoc.

By Ivan M. Tull
Manager National Association of Dyers and Cleaners.

STODDARD Solvent is any petroleum product manufactured in accordance with the specifications developed by W. J. Stoddard of Atlanta, Ga., which are printed elsewhere in this article. It makes no difference what crude base is used nor what company has refined the product; to dry cleaners, the solvent is Stoddard Solvent.

The specifications call for an initial boiling point of 300° F. and an end point of from 400 to 410° F. Dry cleaners have, for years, cleaned clothes with motor car gasoline, and the light vapors, so necessary in motor car fuel but unnecessary in a cleaning solvent, have caused disastrous fires and explosions and in many cases, loss of human life. Heavy ends in motor car fuel are not only unnecessary in a cleaning fluid—they are thoroughly undesirable.

In the manufacture of cleaning solvent, if the cut is made before 410° F. is reached, cleaners who will eventually use this solvent are saved a great deal of trouble and expense. Clothes that have been drycleaned must be dried and aerated in dry rooms or drying tumblers. The heavy ends in standard motor car fuel cause odors to remain in the garments for a considerable period of time, and the garments must therefore be left in the dry rooms or drying tumblers longer than would have been necessary had the heavy ends been eliminated from the solvent. These are the reasons why a good cleaning solvent should have a boiling range of from 300° to 410° F.

This boiling range produces a flash point of approximately 105° F. A. S. T. M. Closed Tag. Cup. Unsaturated hydrocarbons in a cleaning solvent, if in excess of 2 per cent can also cause odor in the garments and should therefore be eliminated. The writer has been informed that the hydrocarbons can approach 4 to 5 per cent without causing trouble if the product is refined from Pennsylvania crude; but he cannot vouch for the accuracy of this statement.

A cleaning solvent refined in ac-

Specifications For Testing Stoddard Solvent

1. The solvent shall be free from undissolved water and suspended matter.
2. Color: The color shall be water-white.
3. Doctor Test: The doctor test shall be negative.
4. Unsaturated Hydrocarbons: Not more than two per cent of the naphtha shall be soluble in concentrated sulphuric acid.
5. Distillation Range: The temperature limits for the distillation are as follows:

The initial boiling-point shall not be less than 300 degrees F.

The dry or end point shall be a temperature not greater than 400 to 410 degrees F.

6. Acidity: The residue remaining in the flask after the distillation is completed shall not show an acid reaction.
7. Aromatic Hydrocarbons: The naphtha shall not contain aromatic hydrocarbons, such as benzene, toluene and others.
8. The odor shall be sweet.
9. Flash point must not be below 105 degrees F.

The tests mentioned in the above specifications shall be made and interpreted in accordance with Bulletin No. 5, Report of Committee on Standardization of Petroleum Specifications, published by the U. S. Bureau of Mines.

cordance with Stoddard specifications has many advantages over motor car fuel, the principle one, of course, being the lessening of the fire and explosion hazard. There is now a definite trend toward the elimination of explosive naphthas in industries where non-explosive solvents can be successfully used. Before many years cleaners will probably be compelled by law to use safe cleaning fluids. In the meantime, the National Association of Dyers and Cleaners is using its influence throughout the trade to persuade all dry cleaners to use Stoddard Solvent.

Insurance rates are being lowered through the increasing use of this heavy solvent, because the fire losses are being substantially decreased. The ultimate effects of its universal adoption throughout the industry will be far reaching. A better class of capital will be attracted to the cleaning and dyeing industry and many new, modern plants will be constructed to meet the rapidly growing demand on the part of the public for service.

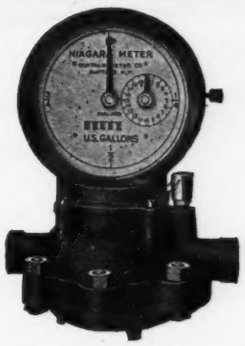
Constructive advertising programs, which will follow, will cause a greatly increased consumption of dry cleaning service and the oil industry will be substantially benefitted through increased sales. The public as a whole is just beginning to realize that dry cleaning is a necessity—and that it is a good investment.

During 1925 approximately $250,000,000 was spent for the purchase of dyeing and cleaning service. This means that the oil industry received approximately $10,000,000 for naphtha consumed.

Many oil companies throughout the country are now manufacturing a solvent closely in accordance with the Stoddard specifications, and they are finding an excellent market for their products. The National Association of Dyers and Cleaners is keeping its members informed as to sources of supply. It is requested that oil companies which propose to enter this field communicate with the National Association of Dyers and Cleaners, 807 Mills Building, Washington. The Underwriters' Laboratories of Chicago, are thoroughly familiar with Stoddard specifications and a sample of any new solvent should be sent to them for analysis and rating.

PASSAIC, N. J.—Tide Water Oil Sales Corp., New York City, expects to move into its new East Paterson, N. J. plant within a month. The new plant is a combination garage and office building. The garage has space for 15 trucks. The warehouse is of monolithic reinforced concrete foundation and floor is 80 by 40 feet. Both buildings are of reinforced concrete and face brick, according to John C. Marsellus, agent at the East Paterson and Nyack stations.

NIAGARA GASOLINE METERS



quickly pay for themselves by detecting waste or theft of oil. There are types for all uses, on gasoline, kerosene, lube oil, or fuel oil. Write us—get a catalog—find out for yourself.

BUFFALO METER CO.
2889 Main St. Buffalo, N. Y.

PHILLIPS PETROLEUM COMPANY

General Office
BARTLESVILLE, OKLA.

Producers of high grade Crude Oil and Manufacturers of Natural Gasoline

Plants located in Okla., Texas, Louisiana and New Mexico

PHILADELPHIA INQUIRER, SUNDAY MORNING, DECEMBER 26
CITY 'RESCUES' $70,000 IN IRON WATER PIPING
Retrieved Castings to Help Relieve Conditions in Lower End of West Phila.
The city has saved $70,000 by digging up an abandoned pipe line and laying it in another location as a means of water supply, reports of Carleton E. Davis Chief of the Water Bureau to Director Caven of the Department of Public Works, showed last week. The saving is on cast iron main forty eight inches in diameter.
The pipe, was laid in 1888 between the old Spring Garden Pumping Station and the East Park Reservoir. It consists of four separate lines and as Spring Garden Pumping Station near the Girard avenue bridge over the Schuylkill River was abandoned ten or twelve years ago the pipes have been unused since that time. It was discovered that they are in good condition and after being cleaned and relaid will have an effective life over an indefinite period.
It was decided to put these pipes to use in relieving conditions in the lower end of West Philadelphia, where the population has increased rapidly and the demand for water has outgrown the existing facilities.
The plans now being put into execution for extending the forty-eight inch main, which now terminates at Fifty-seventh street and Cedar avenue in a southerly direction, generally along the line of Fifty-sixth street to Woodland avenue.

Over 30 years of service—and still as good as new!

Cast Iron Pipe

Write for "United States Cast Iron Pipe handbook," it contains a wealth of valuable data.

United States Cast Iron Pipe and Foundry Company

General Offices:

Burlington, New Jersey

SALES OFFICES

Philadelphia: 1421 Chestnut St.
Chicago: 122 So. Michigan Blvd.
Birmingham: 1st Ave. & 20th St.
Buffalo: 957 East Ferry Street
Cleveland: 1150 East 26th Street
Minneapolis: 6th St. & Hennepin Ave.
New York: 71 Broadway
San Francisco: 3rd & Market Sts.
Pittsburgh: 6th & Smithfield Sts.
Dallas: Akard & Commerce Sts.
Kansas City: 13th & Locust Sts.

Lower Viscosity Oil Used Successfully In Diesel Engine Lubrication

By Fred Norton
and
Ralph R. Matthews
Roxana Petroleum Corp.

Delivered before Petroleum Division, American Chemical Society, Tulsa, April 6.

THE subject of Diesel engine lubrication, if taken as a whole, is very broad. Thus it is our desire to cover specifically the two stroke cycle, land type, Diesel engine. This type engine is very difficult to lubricate owing to the fact that all moving parts are at all times under pressure.

In the early days of the development of Diesel engines the matter of efficient lubrication was not given the attention it should have had. It was soon discovered, however, this neglect was causing considerable trouble to the users of Diesel engines, owing to the fact that it would often not permit the engine to be operated under full load successfully for any length of time. This paper considers such a condition as found in one plant and the steps taken to correct it.

Consider a central power plant using five Diesel engines, each unit rated 523 horsepower, direct connected to alternating generators having a total connected peak load of 1875 horsepower, with a stand-by steam plant for emergency use; the steam plant being kept ready for instant use at all times. The steam plant was necessary because this particular plant had encountered difficulty in keeping their units in continuous operation. The Diesel engines used in this plant were of the type referred to above and were operated at 300 revolutions per minute.

Record of Time Lost

AT the end of the first six months of operating these five units the lost time record was very disapointing to all concerned, as it was found the total time lost, due to all mechanical troubles, had exceeded by far a figure which was considered necessary in good operation. The average running time, as compared with the available running time, was 91.71 per cent and it was later found that 87.53 per cent of all lost time was due to faulty lubrication.

Analyzing the conditions in the plant at this time, the following interesting facts were noted: Cooling system properly designed and in excellent working condition, mechanical conditions of the equipment very good; engines not overloaded; engine room well ventilated; proper grade of fuel being used; engines running at rated speed; in fact from an operating standpoint all things pertaining to good operating conditions seemed to be in the very best of shape.

The actual working conditions of each unit were then investigated. It was found that the room temperature was 73°F; cooling water temperature leaving the jackets 179°F. A water softener was in use, and examination of jackets proved that there was no trouble from mud or scale, indicating rather conclusively that our troubles were not caused by low heat transmission through cylinder wall, at least on account of scale. The lubricating oil used was a Mid-Continent base oil with a Saybolt viscosity of 82 @ 210° F., of which the consumption was one gallon for 757 HPH developed; this grade of oil being the recommendation of the manufacturer who furnished the engines.

THE possibilities of more efficient Diesel engine lubrication through using an oil of from 300 to 500 viscosity at 100 F. which can be used for bearing and air compressor lubrication as well as for the power cylinder, thus doing away with the use of two or three oils for lubricating one Diesel unit, is brought out in the paper of Messrs. Norton and Matthews. In view of the small amount of available data on this subject, the result of their experiments should be of great value to pipe line companies operating Diesel type engines.

Experiments Undertaken

AFTER considering all details very thoroughly one unit was set aside for experimental purposes, endeavoring with this unit to find the cause of the trouble and the remedy therefore.

Water injection had been recommended, with the idea of eliminating the excessive carbon deposit which had been noted in the cylinders, the theory being that the oxygen in the water would combine with the carbon to form carbon monoxide or carbon dioxide, which would pass out the exhaust.

The water was introduced with the air and by emulsifying the desired quantity with the lubricating oil as it was felt this method would distribute it uniformly in the cylinders.

Running conditions seemingly improved, but when the run was completed and the cylinders examined, it was found they were badly pitted and must be replaced. It was also found that the ports between the transfer chamber and power cylinder were practically closed by a formation of sludgy material which was apparently carbon. The exhaust head and pipe, for a distance of some 18 inches, also had a large amount of this carbonaceous matter in them.

The cause of the pitting was not determined, but it may have been due to the sulphur in the fuel oil forming compounds which actively attacked the metal or corrosive action in connection with the formation of the carbon compounds referred to above.

Lowered the Viscosity

IT was also learned that the same trouble encountered in this case, with water injection had forced several manufacturers of various types of Diesel engines to discontinue its use. Thus it was necessary to consider other means of eliminating the operating troubles. Finally, with the assistance of a lubricating engineer from one of the large oil companies and with the same unit that had been used in previous tests, it was decided to use a special lubricating oil for the power cylinders, which was much lower in viscosity and naturally with much lower flash and fire points. It seemed the carbon in the cylinders was caused by high operating temperatures and it was felt that an oil with a lower viscosity would bring them down. The flash and fire points of this grade of lubricating oil were lower than anything that had been tried, and up to this time had been considered dangerous to use.

After several weeks of experimenting with different grades of oil and assembling data from tests of reasonable length, it appeared entirely satisfactory to use an oil with the following approximate specifications:

Gravity °A.P.I.	24.5
Flash °Fahr.	405
Fire °Fahr.	460
Say. Vis. @ 100° Fahr.	375
Say. Vis. @ 210° Fahr.	56

After this grade of oil had been in continuous use for a sufficient length of time to note that practically all apparent trouble had been eliminated, the engine was completely taken down and all parts carefully examined. It was very interesting to find that everything was in fine shape with pronounced indication of very good, if not almost perfect, lubrication.

This test was continued over a 30-day period during which time all the following changes were noted, which had

been brought about by the use of this lower viscosity oil as a lubricant for the power cylinder. The cooling water temperature leaving the water jackets was 123 Fahr., while the engine was carrying full load 24 hours per day. Room temperature and cooling water temperature entering the jackets remained the same as they were when previous data was taken. The oil consumption was materially reduced, as 1241 horse power hours were obtained per gallon of lubricating oil, in comparison with previous consumption. The above oil consumption figures apply to this particular test. In many instances with more modern equipment being used today lower oil consumption has been obtained.

No other type of machine can be damaged so easily and quickly by faulty lubrication as the modern Diesel engine and, while it is a fact that the average cost per unit to lubricate any Diesel engine is small, this cost can very quickly be increased beyond reason by using the wrong grade of lubricating oil. Too many users of Diesel engines, and manufacturers as well, pay too much attention to the flash point of lubricating oils which they recommend and use.

It has been found that lubricating oil manufactured from a crude produced in any of the prominent oil fields with a Saybolt viscosity of from 300 to 500 at 100° F. will give very satisfactory results. While most operators today are using an oil with a viscosity of 500 to 750, and some even higher, it seems that the lower viscosity oils shown above give much more efficient lubrication.

With our present day modern Diesel engine and its methods of applying lubricating oil, especially to the power cylinder, it would seem logical to assume that a reasonable lubrication efficiency has been reached. However, in considering most modern Diesel engine plants, it will be found that from the two to four lubricating oils of different viscosities are being used to lubricate any one type of engine.

This is a condition which recent tests indicate may be eliminated. It is believed that a lubricating oil can be used for the power cylinder which does not have a viscosity high enough to eliminate its use on bearings, and at the same time give satisfactory lubrication to the air compressor on engines where solid injection is not used. Undoubtedly co-operation between the manufacturers of Diesel engines and the refiners and distributors of lubricating oils will result in solution of these and other lubricating problems that may arise.

GENOA, O.—Equipment is being installed for Spenker's service station 10 miles east of Toledo at a busy corner on the Chicago-Buffalo highway. The emblem of N. P. M. A. will be displayed there and products will be furnished by John Stevens Oil Co., Genoa.

"Brass Tacks" Program Provided For Gas Men's Meeting

CLEVELAND, O., April 30

SOMETHING of a novel feature has been provided by the programmakers of the Natural Gas Association of America for the 21st annual convention, which will be held in Tulsa, May 17 to 20.

The entire day of Wednesday, May 19, has been set aside for free-for-all discussion of the following topics:

What method would you use in removing water from a producing gas well, keeping the gas waste to a minimum?

How do you provide for slack in a large welded line to care for expansion and contraction?

What, in your opinion, are effective methods of protecting trunk lines from corrosion?

What factors do you consider in determining whether to use an orifice or displacement meter for commercial and industrial consumers?

What stench can be mixed with natural gas that will be helpful in locating leaks and what are the advantages and disadvantages?

What practical methods are in use for removal of dirt, sand, etc., from pipe lines?

What relation should the rate of production from a gas well bear to its capacity or rock pressure, and what factors affect this relation?

What methods of indicating the condition and rate of decline of gas wells can be used in place of open flow tests?

The discussion is to be informal and is in addition to the formal program of addresses and papers provided for other days.

Hoover to Speak

IT was announced the past week that Herbert Hoover, secretary of commerce, will address the annual banquet in the evening of May 19.

In conjunction with the convention, the Natural Gas Supply Men, Inc., an affiliated organization will hold its annual meeting and exhibition of equipment. The latter will be placed in the buildings of the International Petroleum Exposition and convention sessions will be held at the same site.

A number of entertainment features have been planned. Opening night there will be a wrestling match in which Strangler Lewis, at this writing known as the champion, will exchange grunts and snorts with some contender.

Tulsa's annual Rose Carnival will be held simultaneously with the gas men's gathering, and the visitors will be guests of honor at the "Rose Queen's Ball" at the Mayo on Tuesday night, May 18. The Rose Carnival Parade on Wednesday will wind up at the exposition grounds, so that the gas men will have an opportunity to see the beauties, both feminine and floral, that are gathered together from Oklahoma and neighboring states for the convention.

On Wednesday night, will be the annual banquet with Governor M. E. Trapp, Douglas Malloch, the poet-humorist, and other notables in addition to Mr. Hoover. James A. Veasey of Tulsa, general counsel for the Carter Oil Co., will be toastmaster.

Will Visit Fields

A. W. LEONARD of Tulsa, vice president of the Oklahoma Natural Gas Company and president of the Natural Gas Association of America, is arranging a series of trips to the refineries, gasoline plants, compressor stations and producing oil and gas districts in the Tulsa territory.

From 1200 to 1500 natural gas men and their wives are expected to attend the convention. Reduced railroad rates on the certificate plan have been granted for the convention.

Leasing Law Change Passed by Congress

Staff Special

WASHINGTON, April 30.—Congress has amended the national leasing law of February 25, 1920, so as to make it possible for a person, association or corporation to take and hold oil or gas permits or leases covering 7680 acres in any one state subject to the old limitation that not more than 2560 acres shall be in the same geologic structure in the same producing field. The bill was passed by the House of Representatives several weeks ago and by the Senate on April 22.

This amendment was made necessary to bring about the original intention, which was to allow any one person, corporation or association to take and hold not more than three permits or leases, subject to the 2560-acre limitation, because the law, as passed, was construed to prohibit the holding of more than three pieces of land in any one state, no matter how small the pieces might be. Those who construed it seemed to be of the opinion that Congress was interested more in parcels than in the number of acres one person might hold, or that the language was so inept that instead of saying what was intended, Congress forced those reading the enactment to conclude that the limitation was desired to be on the number of parcels and not on the acreage.

SWEET GRASS, MONT.—Alberta Refining Co., Ltd., has opened a new bulk station at Edmonton, Alta., with C. R. Hale in charge.

Thuro Lubrication Keeps Cars off the Junk Pile!

EVERY car gets enough gas because it won't run without fuel. Most cars get enough oil because overheating and burned out bearings are effective teachers. But chassis squeaks are dismissed as annoying, though not vital, troubles—something to be looked after some other day.

And yet, every squeak is a sign of wear—and wear means repair—needless expense for new and broken parts and the cost of labor—and a squeak is merely the first call for help to keep away from the Junk Pile.

Every garage man, service station and filling station operator can give you that help and put added profits into his cash register by pointing out the meaning of squeaks and what they cost. Why not get this profit and save money for your customers, with the aid of Larkin-Thuro Lubricating Equipment for Larkin-Thuro Lubrication means COMPLETE lubrication—a high grade lubricant forced under pressure to every part of the bearing

A New Bulletin—just off the press—tells how Larkin Thuro-Lubricating Equipment will help put dollars in your pocket. A copy will gladly be sent you on request. Better send for it.

The Larkin Automotive Parts Co.

2145 Home Ave.
Dayton, Ohio

Thuro High Pressure Lubricating Equipment is made exclusively for repair and replacement parts on any car or truck that is equipped with Alemite or Zerk Systems.

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Uniform Accounting Aid to Executives and Protection To Investors in Oil

By Paul R. Jones

General Auditor, Henry L. Doherty & Co., New York

Member, A. P. I. Committee on Uniform Accounting Methods

IS the adoption of a standard uniform system of accounting, as applied to the oil industry, practical? This same question no doubt entered the minds of those engaged in pioneer work in considering uniform accounting methods as applied to other important industries of this country, among them being railroad, natural gas, oil and gas pipe line, manufactured gas, electric light and power and street railway companies.

If the answer is "yes" for these activities, why should there be any question as to the practicability of adopting a uniform system of accounting for the oil industry?

The action of the executives of the American Petroleum Institute at its Fort Worth convention in appointing a committee to study this question suggests that there are no insurmountable obstacles which will prevent the adoption of a uniform system of accounts.

Fear Swept Aside

WHEN speaking of the oil industry, the writer refers to an entire unit, from production through various ramifications to the ultimate consumer of the product.

Fear of trade secrets being disclosed through standardization is the bugaboo which has in the past retarded the general adoption of uniform accounting procedure by major industries. However, when such standards were adopted this bugaboo disappeared and it was found, even in competitive situations, that no harm was done, but, on the other hand, the individual corporation was benefitted.

The necessity of a uniform accounting system was apparent to those responsible for the previously mentioned industries and they it were who first created popular demand for uniform methods of accounting.

MEMBERS of the American Petroleum Institute committee on uniform accounting have been asked to express their views on the tentative general balance sheet and income account which they have drafted and which have been published and defined in National Petroleum News issues of the last two months. Short interviews have been published in the last two issues but Mr. Jones goes more fully into the question of what can be accomplished by uniform accounting methods in the whole industry and in the accompanying paper propounds several questions involving basic principles in oil accounting. Besides being general auditor of Henry L. Doherty & Co., Mr. Jones is also a member of the firm's executive committee.

Interviews with several other members of the A. P. I. committee will be published in a subsequent issue.—Editor

Previous to the adoption of uniform methods of accounting the industries mentioned had to contend with marked disfavor. They were met with lack of confidence, not only on the part of the public but by bankers who were called upon to meet financial requirements of the corporations. This lack of confidence in the industries as a whole was largely due to the fact that no two corporations reported operations on the same basis. Also, various regulatory and legislative bodies adopted drastic accounting procedures, no two of which were similar. This added to the confusion.

HOWEVER, when the public, bankers and the federal and state regulatory bodies recognized the desire of these industries to proceed upon sound, uniform accounting principles they were quick to adopt uniform regulations, which materially assisted in establishing confidence in the stability of these enterprises.

Contrast the foregoing with the present public mind in its attitude toward, and the favor in which, public utilities are now held. It is the writer's firm opinion that this changed attitude by the public has largely been brought about by the adoption of a uniform system of accounting which disclosed essential facts to the public and from which they could draw intelligent conclusions. The publication of facts, in accordance with sound theories and principles of accounting, largely restored public confidence in the utility enterprises.

The public generally, including investors, bankers and federal and state authorities, believe, paradoxically, that the oil industry is hazardous, but that profits are enormous. Based upon publication of market prices contrasted with reports of costs of commodities as issued by the industry, the public has drawn erroneous conclusions from these comparisons, oblivious to the fact that possibly no two companies were reporting results of operations on the same basis, and that the industry as a whole has not agreed upon the factors which should enter into a determination of costs. The industry itself may be responsible for erroneous conclusions because of its own lack of uniform presentation of facts.

Ownership Widely Distributed

The ownership of the average oil company today is widely distributed. With this distribution of securities has

come a larger responsibility for accurate accounting of the investor's interest in the corporate undertaking. The accountant has had to expand methods and adopt accounting procedure to more fairly take care of the equities of these many investors. Good accounting is a necessity and a very important part of any business organization.

An investor is entitled to the protection of his investment, and largely by sound accounting procedure, principles and theory, can capital safely be insured.

At periodic intervals the securities of oil companies conceived in fraud have been distributed by questionable houses to the general public. If the public were informed of the fact that the leaders in the oil industry had established a uniform basis of reporting it would be more difficult for these fraudulent oil companies to present their story in a manner that the investor and the analyst could not immediately detect the weakness of such presentation.

The larger companies have made serious and constant study to arrive at proper accounting principles, but until the American Petroleum Institute brought forth the necessity of a uniform system of accounting the research work done by individual companies was lost to the industry as a whole, and, even among these larger companies, it is a question whether all minds meet on certain technical accounting procedure.

No Trade Secrets Revealed

THERE is no known method of accounting which can change the ultimate return to the investor and, therefore, by the adoption of a uniform system of accounting, a corporation, which at present is striving to present actual facts, cannot be harmed if its present procedure is in accord with sound accounting principles. No trade secrets need be disclosed by the adoption of a uniform system, for, in the main, there are but few major classifications involved, namely, capital expenditures, current assets, capital liabilites, current liabilities, gross income, operating expenses, taxes, interest, depreciation and depletion and net profits available for dividends.

Proper allocation of expenditures to one of the above headings, in accordance with a uniform system, can in no wise be harmful, for each can be subdivided to meet the reporting company's requirements, and such details would be available only to the company's executives.

However, if the industry as a whole could agree as to proper handling of all charges or credits to these major divisions, and some means was adopted to insure the use of the principles involved in this standardization, the investing public would have at its disposal comparative analyses and be able

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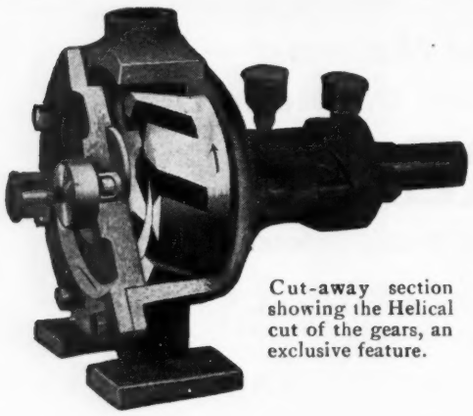

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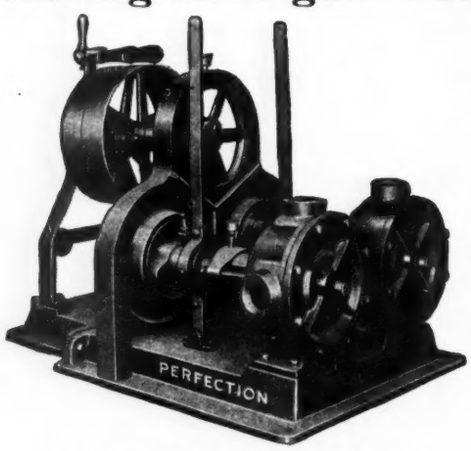

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The man who is experienced will find that it will answer practically any question that may arise on the business side of his enterprise.

The cost of this book is $3.50 and may be obtained by sending your check to—

National Petroleum News, 832 Caxton Bldg., Cleveland, O.

to avoid investments in corporations that do not meet their requirements.

If the oil industry could publicly state that it has adopted uniform principles and theories of accounting, as applied to all corporations engaged in the oil business, would not this policy redound to the benefit of the industry? Also, would not such a standardization of accounting principles and theories help to clarify some of the problems now involved in the income tax return?

Some questions for serious study and consideration might be stated as follows:

Does total capital and surplus invested in the industry, exclusive of depreciation, represent investment upon which a corporation is entitled to a fair rate of return through the market price of its commodities?

Have present methods used in arriving at depreciation charges created an erroneous idea of cost of oil commodities?

Should cost of oil leases held for reserve and subsequently abandoned be treated as a deduction from income when actual value of remaining leases greatly exceeds original cost of total investment in leases?

Should total investment in leases represent the present cost of producing and proven acreage?

Should cost of oil be based upon total cost of development of both dry and producing wells?

Should the investor be entitled to a return upon total cost of production?

Should Inventory Values Fluctuate

SHOULD the prices and values placed on inventories of oil held in stock fluctuate with the market when such wide fluctuations are purely indicative of a buying or selling state of mind, effective as of a certain date, which prices may vary within a few days after the publication of an oil company report?

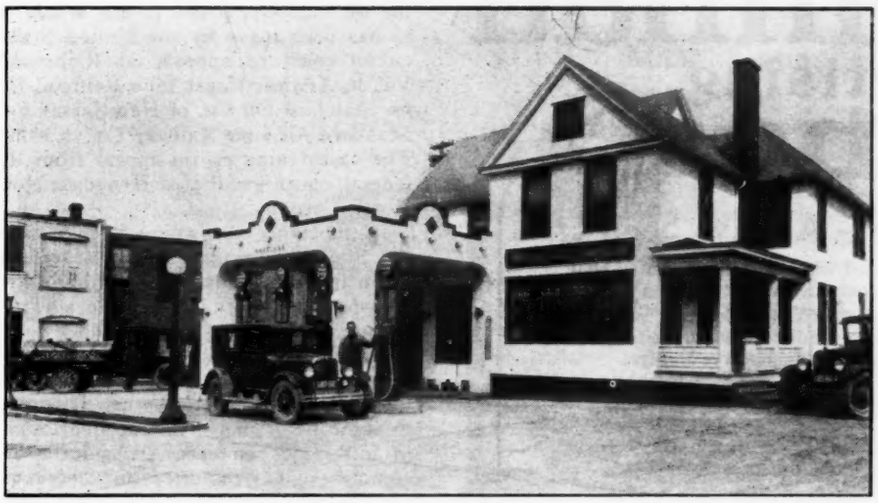
The officers of the American Petroleum Institute have done no greater work in recent years than to get behind those who are now endeavoring to work out some solution of the accounting problem from the viewpoint of the best interest to the oil industry at large.

If the executive management of oil corporations will lend their assistance and encouragement to this project, there is no question but what a co-ordination of thoughts and a solution of the problems will be reached, to the great benefit of the companies affected.

RIVERHEAD, N. Y.—Eastern Oil Co. is now incorporated and will be known as Eastern Oil & Gas Corp. Hubert F. Corwin is president; A. W. Conklin, treasurer and Robert C. Clark, secretary and sales manager.

The company will add a new White truck to its fleet about May 1, which will be equipped with 1000 gallon tank.

A Story on Evolution "Tobacco to Gasoline"



New office and filling station of Moreland Bros. Co., Adrian, Mich., who started in business 37 years ago handling kerosene as a sideline to its tobacco and confectionery business. Now the two latter products have been discontinued and all efforts are concentrated on gasoline and oils.

ADRIAN, MICH., April 30.—Back in 1881 when the domestic consumption of tobaccos and candies far exceeded that of gasoline and oils, the partnership of Moreland Bros. & Crane was organized here to conduct a business in the two latter commodities while the two former products were handled more as a side line.

Last year, however, the company, which now operates as the Moreland Bros. Co., deemed it advisable to discontinue the tobacco and confectionery line and concentrate all its efforts on the distribution of petroleum products. A new office building was recently completed here. It has been built along the lines of a residence, with a filling station as an annex at the front of the building. Offices of the company have just been transferred to the new location.

For 37 years the company engaged in business as a partnership. In 1918, it was incorporated in Michigan and the present name adopted. No changes were made in policy or members of the organization.

In 1924 the Moreland company purchased a controlling interest in the Southern Michigan Oil Co., of Coldwater, Mich. A blending and storage plant where its own lubricating oils are made by the Moreland company is maintained here. The company distributes its products in southern Michigan, in northern Ohio west of Toledo, and in northern Indiana east of Elkhart.

Bulk plants are maintained at Adrian, Hillsdale, Hudson, Tecumseh, Dundee, Coldwater and Bronson, all in Michigan, at Montpelier, O. and at Butler, Ind. Service stations are operated at Adrian, Hudson, Tecumseh, Blissfield, Clinton, Dundee, Jonesville, Coldwater, Litchfield, Quincy, Union City, Bronson, Brooklyn, Addison and Cambridge Junction, Mich., and at Waterloo and Butler, Ind.

R. T. Moreland is president of the company.

New Marketer Will Add Bulk Division

NIAGARA FALLS, N. Y.—August Steinbrenner, who had been engaged for 20 years in the lumber and planing mill business until fire destroyed his plant, is completing a modern filling station, which will be ready to open by May 1.

Storage for 30,000 gallons of oil products has been installed. Mr. Steinbrenner is handling Emco products, made by the Emery Mfg. Co., Bradford, Pa. He purchases in car load lots, and later expects to add a wholesale department to his business.

ST. LOUIS.—Kenneth C. Baker has resigned from the R. J. Brown Petroleum Co. to become general manager of J. D. Streett & Co., St. Louis. According to Mr. Baker, as soon as equipment and improvements have been installed, the Streett company will enter the wholesale marketing business serving the Independent jobbers of the middle west.

TULSA, April 30.—The Refinery Supply Co. of Tulsa, has opened a branch store in Dallas at 917 Santa Fe Building. R. E. Copman, who has been assistant to W. A. Schlueter at the Tulsa store during the past five years, will be manager of the new store. The Refinery Supply Co. has its own factory manufacturing scientific apparatus and represents the C. J. Tagliabue Manufacturing Co. and other manufacturers.

A pump that will serve gas only when the sliding tube is correctly set for accurate measure is strictly

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The Milwaukee Visible is the only pump that will not serve a drop of gas until set for accurate measure.

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Catch the Eye -- Always Seen
There's a unique effect obtained with Cincinnati Globes that gets them attention from almost any angle of approach.
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Model P-G	*Model P-H*
5 gallon hand	*10 gallon hand*
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Standard Wins Fight For Intrastate Rate

WASHINGTON, April 30.—A ruling of extreme importance to a large part of the oil industry, if not to the whole of it, has been made by the United States circuit court of appeals, at Richmond, Va., in Atlantic Coast Line Railroad Co. vs. Standard Oil Co. of New Jersey and Seaboard Air Line Railway Co. vs. same. The cases came up on appeal from the federal court for the eastern district of North Carolina.

In substance the ruling is that when the Standard brings gasoline or refined oil in its tank ships, to the storage and transfer plant at Wilmington, N. C., there puts it into storage, without definite intention to ship it to some predetermed point, the gasoline or oil is not in interstate transportation when it is sent to some point in North Carolina, but is in intrastate commerce. As intrastate commerce it is entitled to and must pay the transportation rates established by the authorities of North Carolina.

This ruling is important because the question has arisen at every point along the Atlantic, the Pacific and Gulf coasts, where it is possible for a tanker to bring petroleum products for storage at the ports, and for later distribution to the interior. It has arisen because, in nearly all states there are rates for hauls within their boundaries that are lower than the level of rates prescribed for hauls from one state to another.

Incidentally, the ruling also seems to make it certain that the rule in regard to taxation laid down in General Oil Co. vs. Crain, U. S. 211, will not be set aside. The taxation rule established by that case was that a state might tax oil sent to a storage plant within its borders for barreling and reshipping because the oil had come to rest in the storage plant.

It also confirms the accuracy of the decision made by the Interstate Commerce Commission in Washington Dehydrated Food Co. vs. Great Northern, decided Sept. 22, 1925. In that case the complainant carried the oil from California points, to its storage tanks at Richmond Beach, Wash. The complaint was against the reasonableness of the rates from Richmond Beach to points in Washington, the food company complaining that they were higher than they should be.

In the North Carolina cases, the railroads, after having carried the oil that had arrived by tank steamer at a North Carolina point on the state rates for 10 years, decided that they were entitled to the higher rates named by interstate tariffs. They demanded the higher rates. The Standard sued for an injunction forbidding them to undertake to collect the higher rates. The injunction was granted. The decision affects the Standard of Kentucky, The Gulf, the Mexican Petroleum Co., The Pure Oil Co. and others as well as the Standard of New Jersey.

The Grade of Volatility, A Proposal For Technical Evaluation of Gasoline

By Dr. Michel Freund
Budapest, Hungary

Reprinted from "Petroleum", Oct. 10, 1921 Issue

Translated by Paul Truesdell

IN industry and trade up to now methods of designating, of differentiating, yes, even of valuing gasoline have been on the basis of specific gravity.

This notwithstanding that we have long been aware that with gasoline for all purposes even cleaning fluid and painter's naphtha, the volatility is the property that determines its value. But simply because determination of the specific gravity with a hydrometer is easily and rapidly carried out, we have clung to it.

The specific gravity bears close relationship to the boiling points of particular rectified gasoline fractions of a given crude oil but as to the adaptability for a definite purpose of a product composed of many components, only fractional distillation gives the right conclusion. For gasolines of the same specific gravity, indeed, can have fundamentally different compositions.

For very special purposes and for large deliveries one must be careful to stipulate a certain character of product on a percentage basis and to set definite boiling point limits. If a more rapid and convenient method than fractional distillation was available such a method would certainly be used universally and not merely in exceptional cases.

In the accompanying table the conditions of acceptance for the composition of several special gasolines are enumerated. A glance at Table 1 shows that the established boiling points with several gasolines lie between 60 and 180 C. (140-356 F.) and that, with the exception of painter's naphtha, with all types the majority of the fractions go overhead below 100 C. (212 F.)

Dr. Freund sent to National Petroleum News a reprint of the accompanying article from "Petroleum," together with the following letter:

"Mr. W. S. James of San Francisco published in National Petroleum News Feb. 17 issue an article entitled 'New Gasoline Testing Method Links Up With Operation of Engine.' I take the liberty to note that the fundamental idea of this test is not new and that the description of my similar method and apparatus appeared long since in the German journal "Petroleum," with drawing and numerous tables of application.

"The same treatise was entitled, 'The Grade of Volatility, a Proposal to Determine the Technical Value of Gasoline.'"

We are glad to publish herewith the translation of Dr. Freund's article.—Editor.

In conformity with this, Dieterich[9] proposed for the purpose of simplifying distillation tests, to determine the gravities only of those parts going overhead at temperatures above and below 100 C. (212 F.) respectively. This method, however, is not suitable for the purpose because with it the narrower fractions find no consideration. However, for example, according to the investigations of Formanek[10], for motor propulsion those very fractions between 80 and 120 C. (176 and 248 F.) are most available.

Another shortening of the test was the distillation test method practiced for the gasoline used in the gas proof lamps in a German coal mine. The fractions were not driven off drop by drop, but rapidly in a full stream.

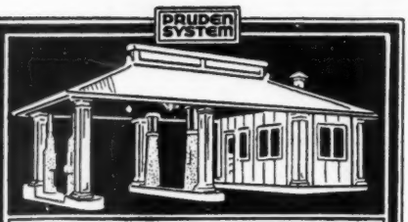
A criticism of this, however, presents itself considering that concordant distillation results can be obtained only by the most careful work and also by using apparatus of dimensions exactly like those of Engler—Ubbelohde[11], Kissling[12], Formanek[13], Allen and Jacobs[14], etc. This normal distillation apparatus is universally used in investigation

9.—Dieterich: Die Analyse und Wertbestimmung der Motorenbenzine (1915) S. 55.
10—Formanek: Benzin, Benzinersatzstoff und Mineralschmiermittel (1918) S. 205-216.
11—Engler-Hoefer: a.a. O.S. 12, 35.
12—Kissling: Laboratoriums buchfuer die Erdoelindustrie (1908) S. 31.
13—Formanek a.a. O.S. 42.
14—Bureau of Mines, Washington, 1911 Bulletin 19.

Table No. 1

Fractions C	60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-150	150-180
Mine lamp gasoline[1]	0%	80%					20%				
Safety lamp gasoline[2]		100%									
Benzine gas lamp gasoline[3]		100%									
Natural gasoline[4]		3%		12%	82%	3%					
Natural gasoline[5]			50%	40%	10%			0%			
Natural Gasoline (Rubber Solvent)[5]		0%		40%	50%	8%	2%				
Cleaners Naphtha No. 1[5]				100%	100%						
Cleaners Naphtha No. 2[5]				100%							
Gasoline for Chemical Cleaning[6]								100%			
Painter's Naphtha[7]											
Navy Painter's Naphtha[8]										140-232C 98%	
Aviation Gasoline	0%		94%			6%					

1—Engler-Hoefer: Das Erdoel Bd. IV (1916) S 487.
2—Klimont: Chem Revue 1895, H 14. S 1202.
3—Engler-Hoefer: a.a. O.S. 492.
4—Trotman: Journal Soc. Chem Ind. 25
5—Engler-Hoefer: a.a. O.S. 501.
6—Engler-Hoefer: a.a. O.S. 503.
7—Engler-Hoefer: a.a. O.S. 505.
8—Engler-Hoefer: a.a. O.S. 507.



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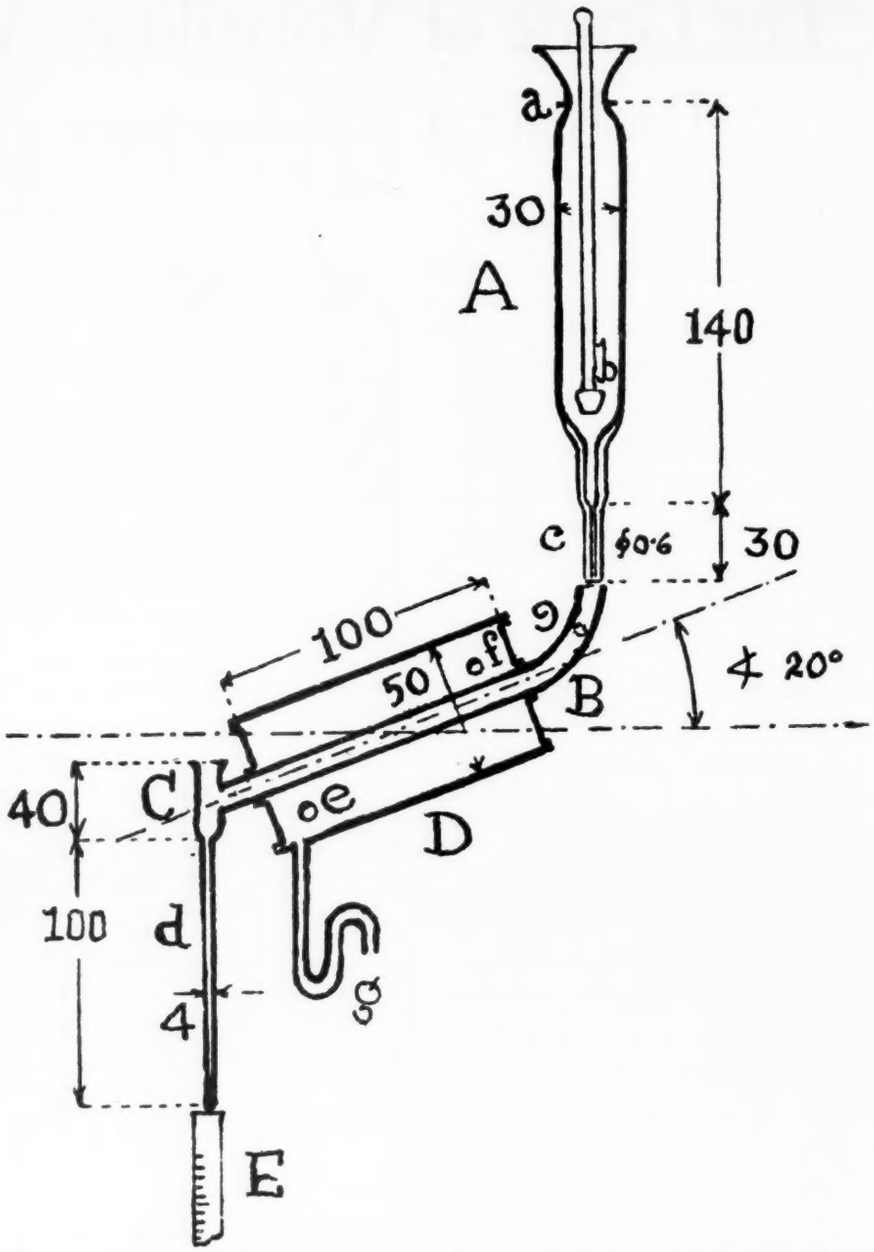

Cut of Dr. Freund's standard vaporizing apparatus with dimensions in millimeters. A—Glass container for measured gasoline. B—Flow tube of copper. C—Bottoms trap of copper. D—Steam heated jacket. E—Graduate for measuring bottoms. a—Mark of 50 cubic centimeters. b—Glass stopper. c—Gasoline feed capillary. d—Bottom outlet iron tube. e—Steam inlet. f—Steam outlet. g—Steam condensate outlet.

of gasolines and is also officially prescribed.

As mentioned above, the technical adaptability of gasolines, leaving out of consideration the always necessary refining, depends chiefly upon the degree of its volatility. In use, by its very nature indeed, gasoline is always vaporized but its vaporization must be controllable so that it is neither faster nor slower than the conditions require.

Degree of Volatility Not Shown

THE fractional distillation serves only to indicate whether the gasoline tested vaporizes easily or not. Then the immediate question is, is there no method for determining the degree of volatility in actual figures and thereby characterizing the gasoline directly.

As a matter of fact we have tried to make the so-called evaporation test on a watch crystal[15] serve this purpose. In this test the time was measured which it took to vaporize 10 cc of gasoline poured on a watch crystal at room temperature. The determination gave good figures for comparison but the end point of benzines which leaves a residue is very hard to determine accurately and, moreover, the duration of a test varied between 35 minutes and 167 hours. Even a hastening of the evaporation through absorption of the air over the gasoline did not much shorten the time[17].

Another investigation method is the "grease spot"[18], test in which the gasoline is dropped on filter paper and the investigator observes whether an unvaporizable residue is present.

15—Kissling: A.a. O.S.
17—Formanek: A.a. O.S. 62.
18—Engler-Hoefer: A.a. O.S. 36, 502.

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"I really can't afford to use any other wire than Wilson. In the first place, my men *want* Wilson Wire. They know we can get them a grade* of Wilson Wire that's just *right* for any kind of welding they have to do. In the second place, they *know* that no matter what grade*, it will run uniform right through. The result is that when we use Wilson Wire our men have no alibis, and don't need any."

***"Grade" means the analysis of the wire.*

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You'll find it pays to insure your welding by using Wilson Wire, because you can secure the *right* grade (analysis) for every kind of metal you weld, and, whatever the grade selected, it will run uniform throughout.

Write today for your samples of Wilson "Color-tipt" Welding Wire, indicating the kind of metal you desire to weld.

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WILSON

WELDING MACHINES AND WELDING WIRE

Table No. 2

Fractions C	20-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
Sp. Gr. 15/4.....	0.6403	0.6477	0.6670	0.6930	0.7273	0.7302	0.7409	0.7506	0.7563	0.7622	0.7692	0.7746	0.7790	0.7817	0.7877	0.7966	0.8035
Degree of Volatility.	50.0	50.0	50.0	50.0	42.5	41.4	34.9	9.7	8.6	6.6	5.6	3.0	1.6	0.5	0.1	0.0	0.0
Evaporation Time.. on Watch Glass..	35 Min.		51 Min.		1 hour 36 Min.		4 hours 11 Min.		9 hours 18 Min.		21 hours		31 hours 30 Min.		167 hours 13 Min.		

as is apparent the industry up to date lacks a rapid and trustworthy method which makes it possible to characterize gasolines from the correct viewpoint. After tedious research, the working out of a technical testing method which appears to meet the above mentioned requirements has been achieved.

The determination is carried out in an apparatus of exact dimensions of which the chief feature is an evaporation tube heated by steam to 100 C. (212 F.) The gasoline to be tested, at a temperature of 20 C. (68 F.), is fed through the evaporating tube by means of a pipette containing exactly 50 cc 3 and is caught in a burette likewise holding 50 cc 3 placed as a receiving vessel. The quantity of the gasoline vaporized is read directly on the scale of the burette in cubic centimeters and is noted as the "grade of volatility" of the sample.

Description of the Apparatus

THE dimensions of the apparatus are shown in the accompanying cut, Figure 1. "A" is a 50 cc glass pipette which is filled with the gasoline to be tested up to the mark "a." Through drawing out of the ground glass stopper "b" the gasoline is allowed to flow through the small tube "c" into the evaporating tube "B." The end of the small inlet tube must be flush with the mouth of the evaporating tube without touching its walls. The time it takes water at 20 C. (68 F.) to run out of the pipette shall be five minutes, 35 seconds.

The pipette is fastened so it is movable in a horizontal plane.

The evaporation tube is made of copper and carries on its lower end a soldered-on copper trap "C" with the iron outlet pipe "d." The evaporating tube shall form with the horizontal plane, an angle of exactly 20 degrees for the control of which a level or plumb bob (not shown in the drawing) is employed.

The heating jacket is made of copper or sheet iron.

The 50 cm long steam inlet pipe "e" attached on the side and the outlet pipe "f" must have a gentle slope of about 15 degrees away from the apparatus in order that the water condensed on the walls of the heating jacket can flow away below through the syphon "g."

Through this arrangement a constant, even flow of steam is delivered and the condensed water is prevented from coming in contact with the evaporation tube.

The source of the steam is attached to the steam inlet by means of a rubber tube. The steam must flow out of the outlet pipe in a strong stream.

The end of the outlet tube opens into the receiving burette "E." This is marked off like the usual titrating burette in a scale must be equipped with a glass petcock and must have a capacity of exactly 50 cc. For very light gas, it is better to use a graduated test tube containing 10 cc which may be cooled with water.

The grade of volatility of distilled water at 68 F. in apparatus of correct dimensions is 0.5.

Directions for Determination of Volatility

1. The pipette is disconnected from the evaporation tube, the steam source is connected and in the mouth of the evaporation tube a thermometer is placed. When the thermometer ceases to rise the test can begin.

2. The cold pipette is filled to the mark with gasoline at 20 C. (68 F.) and thereupon it is placed in position and the test immediately begun after the glass rod is removed from the pipette.

3. After the gasoline sample has been run off the pipette is set aside and the scale on the burette is read off after it has been cooled.

4. In 10 minutes the evaporation tube reaches again its original temperature. An empty burette is set in and the next determination can follow.

The gasoline to be studied must be completely free from water and clean. It should be dried in a calcium chloride filter.

After several tests or if drops of water appear in the pipette or in the inlet tube, then the pipette and the evaporation tube must be well rinsed out with alcohol or acetone, or if these are not at hand, with gasoline. Complete dryness is the goal to be aimed at. While the test is going on, the apparatus must be protected from strong drafts of air.

The average time taken for a test is 15 minutes and the accuracy is within 1 cc 3.

Application and Sensitiveness of the Test

IN setting up and trying out the apparatus narrow fractions were prepared by many fold redistillation of Boryslaw gasoline. The volatility and specific gravity of these fractions as well as the corresponding indicated evaporation value as determined by Formanek[15] by the watch glass method are shown in table 2.

As is apparent, the volatility value of the fractions under and over 100 C. (212 F.) are substantially different and through this fact the relative technical requirements can be considered and compared by figures.

But the grade of volatility gives also the required narrowness of fractionation which gives closer acquaintance with the desired boiling points. As the collection of figures below shows, the unwanted portions as shown in Table 1—the portions boiling below 60 C.—as well as heavier fractions, for example those boiling above 102 C. (216 F.), when blended with the prepared fractions in the proportion to 1 per cent, produce a very radical change in the grade of volatility. In all the following blend experiments the fractions described in Table 2 were used.

16—Formanek: A.a. O.S. 53, 54.

Table 3

	Original Gasoline	Mixture Original Gasoline with 1% of the Fraction						
		20-40	40-50	50-60	120-130	160-170	180-190	190-200
Sp. Gr. 15/4	0.7256	.....	.....	0.7250	0.7260	.....	.....	.....
Degree Volatility	40.3	.....	.....	41.4	39.7	.....	.....	.....
Sp. Gr. 15/4	0.7270	.....	0.7261	.....	0.7273	0.7275	.....	.....
Degree Volatility	36.8	.....	38.3	.....	33.9	32.9	.....	.....
Sp. Gr. 15/4	0.7456	0.7445	0.7446	.....	.....	.....	0.7461	0.7461
Degree Volatility	18.7	22.6	22.4	.....	.....	.....	14.8	14.5

Table No. 4

	Components of the Mixture			Mixture	For Comparison
Composition	50% Aviation Gasoline	24% Fraction 40-50	26% Fraction 180-190	.....	Aviation Gasoline
Sp. Gr. 15/4	0.7270	0.6477	0.7966	0.7261	0.7270
Degree Volatility	43.7	50.0	0.0	22.9	43.7
Composition	50% Heavy Naphtha	25% Fraction 120-130	25% Fraction 160-170		Heavy Naphtha
Sp. Gr. 15/4	0.7720	0.7622	0.7817	0.7719	0.7720
Degree Volatility	5.5	6.6	0.5	3.0	5.5
Composition	.....	25% Fraction 40-50	75% Fraction 140-150	.....	Fraction 90-100
Sp. Gr. 15/4	.....	0.6477	0.7746	0.7420	0.7409
Degree Volatility	.....	50.0	3.0	10.7	34.9

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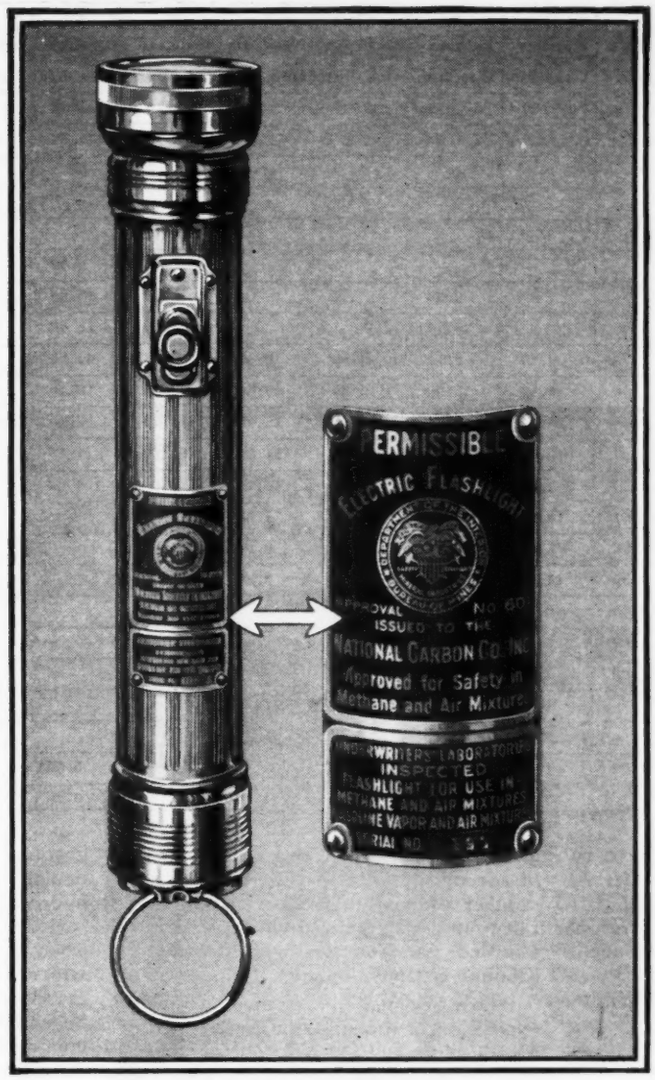

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Table No. 5

		1	2	3	4	5	6	7	8	9	10	11
		Galician Gasoline	Rumanian Gasoline	Rumanian Gasoline	Galician Gasoline	Galician Gasoline	Galician Gasoline	Rumanian Gasoline	Galician Gasoline	Rumanian Gasoline	Auto-Benzol	Natural Gasoline
Specific Gravity		0.7782	0.7700	0.7676	0.7620	0.7592	0.7420	0.7300	0.7162	0.7274	0.8798	0.6650
Degree Volatility		1.1	3.6	4.2	4.6	5.6	14.7	25.5	36.2	36.8	46.2	47.4
Initial B. P. C.		77	78	44	68	56	33	30	27	59	75	27
Fractions in percent by weight	40– 50											6.15
	50– 60									1.00		6.00
	60– 70							2.40		15.00		15.25
	70– 80			0.30			0.14	24.60	13.20	20.00	5.20	25.25
	80– 90			8.10			27.40	12.00	31.80	27.50	72.00	11.00
	90–100		0.20	9.17	3.80	2.40	20.80	22.00	15.12	15.00	10.40	12.20
	100–110		4.40	10.90	10.20	20.40	9.40	10.00	13.20	10.50	8.00	15.00
	110–120	1.20	15.80	15.90	27.20	18.20	23.20	16.40	11.92	4.00	3.00	2.50
	120–130	8.20	10.88	20.45	21.40	21.00	10.40	7.40	3.80	3.50		
	130–140	16.20	7.20	21.81	12.60	12.00	6.00	4.60	7.20	3.00		
	140–150	18.64	16.80	6.81	12.00	12.00	1.00					
	150–160	20.52	7.00	2.72	7.40	6.80						
	160–170	17.20	11.08	1.36	4.00	3.60						
	170–180	10.40	6.64									
	180–190	4.20	5.20									
	190–200	2.20	5.80									
	200–210		4.00									
	210–220		3.00									
	Residue	1.20	1.60	2.27	0.80	2.40	1.00	0.40	0.60		1.00	
	Loss		0.40	0.21	0.60	1.20	0.66	0.20	3.16	0.50	0.40	6.65

From this table, moreover, it is to be seen that the fractions boiling under 70 C. (158 F.) and over 180 C. (356 F.) shown in Table 2, which unblended all show similar degree of volatility from 50 to 0, in the blends reduced the volatility of the gasolines composing them in varying degrees.

As it develops from the above discussion, there must exist a close relationship between the composition and the volatility of gasolines because the fractions mixed together under different circumstances at 100 C. always exhibit different vapor tensions and viscosities and accordingly also differ from each other in volatility value.

Specific Gravity Common Property

ON the other hand, the specific gravity is an added property of all hydrocarbons entering into the question, whereas with volatility this is not generally the case as one can easily convince himself from the proved values in Tables 2, 3 and 4. Accordingly, by the statement of the specific gravity and the volatility a gasoline is fully characterized, or otherwise expressed, if two gasoline samples have the same specific gravity and the same degree of volatility so must they also be exactly alike in their composition.

For as already mentioned above, the specific gravity alone gives no sufficient ground for judging gasoline. Because with the specific gravity remaining the same, it is possible as shown in the following table to change fundamentally the composition which naturally always brings with it a change in the grade of volatility. The number limits of specific gravities permit an unlimited number of combinations with the volatility numbers so that plenty of room is afforded for countless possibilities of gasoline composition.

Below, for example, is given a tabular exposition of the supecific gravity, grade of volatility and composition of several commercial gasolines. The first per cent number signifies in each analysis the initial boiling point and the temperatures throughout the distillation range follow.

If one studies this table the application of the degree of volatility, which presents the finest gradations of the percentage composition, becomes apparent. Naturally gasolines from different sources must receive special consideration accordingly, because indeed the corresponding fractions of these different gasolines display entirely different specific gravities. (Table 5, Nos. 8 & 9.)

What has been said applies also to the other motor fuels such as benzol. (Table 5, No. 10).

Pass Up Superfluous Data

With the degree of volatility one should not attempt to obtain all the data of a fractional distillation test which is not possible by this method and which anyhow on practical grounds is entirely superfluous. The aim of the method is to make it possible easily and quickly to identify good gasoline for which purpose hitherto no method has been available. Fractional distillation does not directly give the properties of gasoline for a particular purpose and it is easy to find out in the technical valuation of the gasoline clearly the function of the particular fractions of the gasoline in the hydrocarbon mixture.

Every fractional distillation furnishes a table very hard to interpret from which judgment can only be made by guess work and which generally must be compared with tables of other tests conducted by other methods.

As against that, the degree of volatility is expressed in a single number and the limits and specific gravity are all that need to be stated.

Summary

1. The grade of volatility is the evaporation loss expressed in cubic centimeters suffered by 50 cc of gasoline at 20 degrees C. in flowing through a standard apparatus heated to 100 C.

2. The grade of volatility is in the greatest measure dependent on the composition of the gasoline.

3. The degree of volatility and the specific gravity of a gasoline plainly establish its quality.

4. For technical determination of the value of gasoline, the use of the degree of volatility is proposed, instead of the lengthy fractional distillation.

Buys Jomack Holdings

TULSA, April 29.—Mid-Continent Petroleum Corp. has acquired through purchase the properties of the Jomack Oil Co. of Bristow, a company formed by B. B. Jones and George McMillan, oil operators of that city. The properties consist of 800 barrels daily production in the Bristow district, Creek county, and 11,000 acres of leases and fee lands in Oklahoma and Arkansas.

Andes Petroleum Offers Speculative Stock

CLEVELAND, April 30.—Andes Petroleum Corp., which has concessions of more than 4,000,000 acres in Venezuela, last week offered as a speculation 300,000 shares of no par capital stock at $6.50 a share. The underwriting syndicate consisted of Henry Zuckerman & Co., New York; Jerome B. Sullivan & Co., New York; Hines, Robertson & Co., Boston; Bongard & Co., Toronto, and R. P. Clark & Co., Ltd., Vancouver.

Of the Andes company's holdings, 1,150,000 acres are in the Maracaibo basin and border properties of the Standard Oil Co. of New Jersey, The Texas Co., Pure Oil Co., Maracaibo Oil Exploration Corp., Gulf Oil Corp., and Royal Dutch-Shell. Favorable report on the property was made by Huntley & Huntley, geologists of Pittsburgh. The company also has 740,000 acres in the Magdalena valley in Colombia.

The Atlantic Refining Co., according to Louis de Brigard, vice president of the Andes corporation, has contracted to develop the Venezuelan concessions, thereby receiving an undivided half interest in them. Atlantic is to pay all expenses of geologizing and engineering and the first year's government tax. After those items, expenses including drilling of wells are to be borne jointly by the Andes and Atlantic.

The Venezuela Gulf Oil Co., subsidiary of the Gulf Oil Corp., has contracted for the purchase of 12,500 acres on the checkerboard plan in the Mara district, Zulia, Venezuela, and to give the Andes and Atlantic a substantial royalty interest in the properties so acquired, Mr. de Brigard said, besides payments in cash and oil.

With this issue the Andes will have outstanding 1,667,570 shares. Proceeds of this issue are to defray the corporation's share of drilling expenses and to provide additional working capital. Officers and directors of the corporation are:

John H. Allen, president, American Foreign Banking Corp.; Anthony Andujar, president, Andes Petroleum Corp.; John C. Cosgrove, chairman of the board, Cosgrove Meehan Coal Co., director, Federal Reserve Bank, Philadelphia; Louis de Brigard, vice president and treasurer, Andes Petroleum Corp.; Philip de Ronde, president, Oriental Navigation Co.; R. W. Evans, president, R. W. Evans & Co., Inc.; Henry S. Fleming, president, Henry S. Fleming Co.; James L. Freeborn, president, Freeborn & Co., Inc.; Frank H. Hall, director, Corn Products Refining Co.; B. E. Hepler, vice president, Hope Engineering & Supply Co.; W. J. Morris, vice president, Youngstown Sheet & Tube Co.; Frederick B. Rogers, president, Geo. W. Rogers Co., Inc.; Robert A. Putnam, vice president, Andes Petroleum Corp.; Hugh J. Sheeran, president, New York Railways Corp.; Harold C. Tiebout, president, Thrift Service Stations, Inc.

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Florida Leads in Per Car Consumption And Gain in Gasoline Gallonage

By Roger B. Stafford
N. P. N. Staff Writer

Staff Special

CLEVELAND, April 30

GOVERNMENTS of 44 states and the District of Columbia collected $147,789,333 from automobile owners last year in gasoline taxes. This amount was the levy on 6,674,484,905½ gallons of gasoline and, in some states, benzol. Taxes in 1924 totaled $76,474,-019.

Tax figures show Florida to have lead all states last year in per car consumption of gasoline and in total gallonage gain over 1924.

Exempted gasoline, that which is used for purposes other than motor fuel on the public highways, was reported as 112,552,098½ gallons in 24 states. Some states do not exempt gasoline used off the public highways as fuel for internal combustion engines, or that used in dry cleaning or the industrial arts.

The tax figures account for 6,787,037,-004 gallons of the 9,325,094,000 gallons consumed in various ways in the United States in 1925. The total consumption figure is that of the Bureau of Mines.

THE 6,787,037,004 gallons was 72.7 per cent of the total domestic gasoline demand last year but because eight of the states taxed gasoline only from 7 to 11 months, actual motor fuel consumption in the 44 states and the District of Columbia levying a tax was probably nearly 75 per cent of the total for the country.

Consumption of gasoline by industrial users who import the gasoline into the states in tank car quantities and consume all of it themselves, thereby not having to report to state bureaus, may bring the consumption percentage in the 45 taxing groups to about 80 per cent or approximately as much as the percentage of automobiles these groups have to the total number of motor vehicles in the United States.

Four states have neither gasoline taxes nor inspection. It is impossible to obtain statistics on gasoline consumed in them. They have 20.7 per cent of the automobiles registered in the country. Registrations in those states and the rest of the country, grouped as tax states, were on Dec. 31, 1925:

1925 Automobile Registrations in States Having No Taxes

Illinois	1,263,177
Massachusetts	646,153
New Jersey	580,554
New York	1,625,583
Total	4,115,467
In states with taxes	15,838,881
Total U. S.	19,954,347*

*Revised figures Bureau of Public Roads, Department of Agriculture.

Per car consumption of gasoline, based on the average number of motor vehicles registered, varied last year from the 1924 average. In 20 states the average consumption was larger than in 1924 and in 18 states the average was lower. Comparisons are impossible in eight states which adopted a tax only last year. From gross gallonage figures collected by the American Petroleum Institute from tax and inspection officials of 44 states there were no recessions in 1925 totals from 1924 totals.

Largest Gain in South

LARGEST gain in the per cent average consumption of gasoline was made by the southern states. Florida has been

Table 1—1925 Gasoline Statistics, Automobile Registrations, Average Consumption per Car

State	Tax Per Gallon	Net 1925 Tax Receipts	Net Number of Gallons Taxed in 1925	Number of Gallons Exempted	Cost of Collection	*Automobiles Registered Dec. 31, '25	Average Registration During 1925	1925 Aver. Consump't Per Car	1924 Aver. Consump't Per Car
Alabama	2c	$2,140,801.83	107,040,096½	.....	$9,890.28	194,580	175,921	608.4	566.7
Arizona	3c	855,950.58	28,531,686	5,986,679	.....	68,029	62,929	453.4	457.2
Arkansas	(m) 4c	2,950,360.00	83,543,000	.....	.....	183,569	162,776	513.2	433.6
California	2c	16,033,194.94	801,659,749	.....	.....	1,440,541	1,381,011	580.5	539.6
Colorado	2c	1,814,933.90	98,741,301	1,526,829	.....	240,097	226,672	435.6	460.3
Connecticut	1 and 2c	1,892,885.00	122,230,292	4,599,985	.....	250,669	232,494	521.4	525.6
Delaware	2c	350,580.56	17,529,028	.....	40.00	40,140	37,638	456.4	467.4
Dist. of Columbia	2c	889,597.96	44,479,897¾	348,495	.....	103,092	91,906	483.9	488.2
Florida	4c	7,024,308.69	175,607,717¾	.....	(l) 8,000.00	286,388	240,292	730.8	688.0
Georgia	3 and 3½c	4,421,314.09	147,377,136	.....	4,200.00	248,093	228,697	644.4	584.9
Idaho	2 and 3c	895,444.25	30,809,320	1,220,682	9,534.82	81,506	75,366	408.8	414.6
Indiana	2 and 3c	7,653,049.00	277,285,000	.....	.....	725,410	687,815	403.1	399.6
Iowa (a)	2c	3,505,114.81	175,255,740½	3,153,455½	5,520.18	659,202	640,054 (h)	342.2	.....
Kansas (b)	2c	2,682,133.49	134,106,675	.....	7,500.00	457,033	433,962 (h)	412.3 (i)	471.8
Kentucky	3c	3,065,611.20	102,187,040	.....	12,000.00	261,647	246,716	414.2	354.2
Louisiana	2c	2,339,542.55	116,989,139	.....	7,500.00	207,000	192,500	607.7	616.5
Maine	1 and 3c	1,268,499.04	58,304,933	768,781	5,004.90	140,499	133,839	435.6	382.8
Maryland	2c	1,974,536.27	98,726,813½	2,297,479½	2,500.00	234,247	214,914	459.3	391.7
Michigan (c)	2c	8,802,919.45	440,145,972½	27,481,003	.....	989,010	928,799 (h)	513.3	.....
Minnesota	2c	3,864,281.94	193,214,097	6,250,000	2,320.00	569,694	536,341 (h)	450.3 (i)	448.8
Mississippi	3 and 4c	1,189,275.70	92,193,985	.....	1,800.00	177,262	155,905	591.3	515.3
Missouri (k)	2c	4,819,305.66	240,965,283	3,747,741	26,837.73	604,166	574,401	419.5	453.0
Montana	2c	827,348.26	41,367,413	.....	1,000.00	94,656	87,176	474.5	(j)
Nebraska (d)	2c	2,193,400.13	109,620,006½	421,682	(l) 4,500.00	338,719	323,716 (h)	406.3 (i)	417.9
Nevada	3 and 4c	318,717.57	9,251,000	418,213	.....	21,169	19,779	467.7	477.0
New Hampshire	2c	707,072.20	35,353,585	453,407	.....	81,498	76,714	460.8	465.8
New Mexico	1 and 3c	581,214.00 (l)	21,384,292	.....	(l)15,284.29	49,111	45,431	470.7	508.9
North Carolina	3 and 4c	6,092,387.40	183,963,000	.....	.....	340,287	323,022	569.5	479.4
North Dakota	1c	652,095.31	65,209,531	1,056,610	1,000.00	144,972	131,017	497.7	391.4
Ohio (e)	2c	9,006,010.75	450,300,537½	6,191,734½	4,100.00	1,346,400	1,295,000 (h)	448.0	.....
Oklahoma	2½ and 3c	5,143,517.45	176,733,177	.....	13,021.14	424,345	383,664	460.6	451.2
Oregon	3c	2,909,095.05	96,969,835	5,201,868	6,553.32	216,553	204,591	473.4	499.4
Pennsylvania	2c	10,559,208.68	527,960,434	.....	65,000.00	1,330,433	1,279,520	412.6	396.3
Rhode Island (f)	1c	318,356.68	31,835,668	4,107,349	2,364.24	101,756	96,204 (h)	413.6	.....
South Carolina	3 and 5c	3,709,931.17	84,031,611	103,680	5,000.00	168,496	165,939	506.4	507.5
South Dakota	2 and 3c	1,771,185.40	59,803,850	8,097,392	3,524.27	168,028	155,154	385.4	299.4
Tennessee	2 and 3c	3,214,137.76	110,308,989	.....	12,856.55	244,626	224,653	491.0	409.6
Texas	1c	4,641,784.27	464,178,427	.....	10,500.00	975,083	904,562	513.0	438.2
Utah	2½ and 3½c	1,063,593.88	32,217,216	.....	3,750.00	90,500	79,864	403.4	379.0
Vermont	1 and 2c	502,271.82	25,863,167	.....	(l) 500.00	69,576	65,278	396.2	361.3
Virginia	3c	3,701,950.96	123,398,365	5,372,191	5,603.78	282,650	272,147	453.4	459.4
Washington	2c	3,073,654.39	153,682,719½	18,880,136	.....	328,442	311,627	493.1	513.4
West Virginia	2 and 3½c	2,186,739.19	76,331,662	779,283	7,500.00	217,589	203,862	370.0	294.7
Wisconsin (g)	2c	3,736,143.96	186,807,198	4,087,423	9,074.38	594,386	559,804 (h)	417.1	.....
Wyoming	1 and 2½c	445,875.89	20,970,320	.....	.....	47,711	45,675	459.1	476.0
Total	....	$147,789,333.08	6,674,484,905½	112,552,098½	.....	15,838,880	14,915,346 (h)	476.1	457.0

*Revised registration figures from Bureau of Public Roads, Department of Agriculture.
(a) Tax figures, Apr. 16-Dec. 31 (b) Tax figures, 7 mos. (c) Tax figures, 11 mos. (d) Tax figures, 9 mos. (e) Tax figures, Apr. 18-Dec. 31. (f) Tax figures, 7 mos (g) Tax figures, 9 mos. (h) Estimated for part of year before tax became effective. (i) Based on inspection figures. (j) For fiscal year ended June 30, 1924. (k) Subject to revisions. (l) Approximate. (m) 1 cent at Texarkana.

Table 2--Comparative Gasoline Gallonage by States for 1925, Compiled from Tax Reports

	ALABAMA		ARIZONA		ARKANSAS		CONNECTICUT		DELAWARE	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	7,251,000	5,454,000	1,886,000	1,706,000	6,209,000	3,414,000	6,810,000	6,379,000	996,000	1,053,000
February	6,726,000	4,861,000	2,103,000	1,788,000	5,403,000	3,109,000	5,466,000	4,773,000	1,050,000	1,054,000
March	7,595,000	5,900,000	2,085,000	1,793,000	4,930,000	3,308,000	7,544,000	6,334,000	1,124,000	458,000
April	8,232,000	6,736,000	2,340,000	1,797,000	6,260,000	4,050,000	9,849,000	8,238,000	904,000	934,000
May	9,390,000	7,255,000	2,459,000	1,959,000	6,706,000	5,617,000	11,891,000	10,071,000	2,040,000	2,105,000
June	8,915,000	7,087,000	2,507,000	2,116,000	5,520,000	4,992,000	14,062,000	10,702,000	1,957,000	1,144,000
July	10,009,000	8,193,000	2,459,000	2,101,000	9,617,000	5,695,000	12,463,000	12,164,000	1,714,000	1,258,000
August	10,131,000	8,525,000	2,429,000	2,118,000	8,948,000	5,946,000	13,448,000	12,205,000	1,828,000	2,293,000
September	9,707,000	8,021,000	2,470,000	2,204,000	7,665,000	6,285,000	12,700,000	10,749,000	1,686,000	1,702,000
October	9,997,000	8,442,000	2,449,000	2,263,000	7,901,000	6,202,000	12,175,000	10,834,000	1,573,000	920,000
November	9,447,000	8,326,000	2,555,000	2,264,000	6,886,000	6,609,000	10,789,000	9,611,000	1,355,000	1,884,000
December	9,594,000	8,132,000	2,789,000	2,253,000	7,498,000	5,190,000	9,734,000	9,049,000	1,605,000	1,331,000
Total	106,994,000	86,932,000	28,531,000	24,362,000	83,543,000	60,417,000	126,831,000	111,109,000	17,832,000	16,136,000
Percent of gain	23.07	.....	17.11	.....	38.27	.....	14.13	.....	10.51	.....

	DISTRICT OF COLUMBIA		FLORIDA		IDAHO		INDIANA		KENTUCKY	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	2,731,000	.....	15,207,000	10,617,000	1,072,000	1,047,000	18,535,000	13,693,000	6,499,000	6,228,000
February	2,775,000	.....	13,597,000	9,594,000	1,356,000	1,122,000	18,085,000	11,391,000	6,087,000	5,422,000
March	3,373,000	.....	14,750,000	10,835,000	1,653,000	1,595,000	15,914,000	14,887,000	6,049,000	4,508,000
April	3,761,000	.....	14,444,000	10,069,000	2,221,000	2,048,000	20,589,000	19,883,000	6,855,000	6,359,000
May	4,008,000	839,000	15,073,000	10,183,000	2,824,000	2,645,000	21,236,000	22,551,000	8,385,000	4,449,000
June	4,140,000	3,330,000	14,237,000	9,369,000	3,151,000	2,820,000	25,496,000	22,974,000	9,139,000	6,736,000
July	4,243,000	3,574,000	16,031,000	9,541,000	3,590,000	3,238,000	26,212,000	25,093,000	9,955,000	8,796,000
August	4,124,000	3,668,000	17,361,000	9,727,000	4,119,000	3,319,000	28,457,000	26,783,000	10,984,000	8,704,000
September	4,079,000	3,169,000	18,774,000	9,760,000	3,648,000	3,142,000	28,807,000	25,165,000	10,505,000	10,485,000
October	4,025,000	3,537,000	22,075,000	10,329,000	3,271,000	2,705,000	27,536,000	24,724,000	9,514,000	8,590,000
November	3,837,000	3,197,000	22,831,000	11,983,000	2,776,000	2,051,000	24,686,000	21,439,000	8,653,000	8,765,000
December	3,735,000	3,162,000	26,181,000	13,661,000	2,350,000	1,551,000	21,732,000	18,535,000	7,422,000	7,564,000
Total	44,831,000	.....	210,561,000	125,668,000	32,031,000	27,283,000	277,285,000	247,118,000	100,047,000	86,606,000
Percent of gain	.....	.....	67.56	.....	21.31	.....	12.20	.....	15.52	.....

	LOUISIANA		MAINE		MARYLAND		MISSISSIPPI		NEVADA	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	9,149,000	7,338,000	1,607,000	1,485,000	5,210,000	2,931,000	5,555,000	4,117,000	446,000	399,000
February	8,146,000	5,708,000	737,000	557,000	5,361,000	5,257,000	4,762,000	4,095,000	544,000	446,000
March	8,196,000	6,891,000	1,460,000	924,000	6,889,000	4,330,000	5,804,000	3,264,000	723,000	515,000
April	9,448,000	7,850,000	3,459,000	2,253,000	7,002,000	6,602,000	6,463,000	4,855,000	577,000	660,000
May	10,026,000	8,438,000	6,210,000	5,069,000	9,357,000	7,946,000	8,603,000	3,285,000	818,000	795,000
June	9,739,000	8,160,000	6,807,000	6,229,000	9,754,000	8,004,000	6,839,000	5,017,000	932,000	830,000
July	10,626,000	9,985,000	8,534,000	7,493,000	10,674,000	9,122,000	8,160,000	5,525,000	983,000	896,000
August	10,145,000	8,385,000	8,352,000	7,963,000	10,893,000	9,596,000	8,290,000	6,415,000	985,000	856,000
September	10,930,000	8,954,000	7,498,000	6,924,000	10,389,000	8,725,000	8,218,000	5,944,000	922,000	805,000
October	10,846,000	9,720,000	5,994,000	6,261,000	9,597,000	9,256,000	7,601,000	6,452,000	854,000	722,000
November	10,133,000	9,269,000	4,642,000	4,974,000	8,723,000	7,737,000	7,172,000	6,574,000	768,000	659,000
December	11,159,000	9,321,000	2,995,000	2,131,000	8,416,000	7,403,000	8,313,000	6,019,000	699,000	535,000
Total	118,543,000	99,749,000	58,295,000	52,245,000	102,265,000	86,909,000	85,780,000	61,562,000	9,251,000	8,118,000
Percent of gain	18.35	.....	11.58	.....	17.66	.....	39.47	.....	13.95	.....

	NEW HAMPSHIRE		NEW MEXICO		NO. CAROLINA		OKLAHOMA		OREGON	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gzllons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	1,135,000	672,000	1,347,000	1,029,000	12,158,000	10,677,000	10,789,000	10,354,000	5,313,000	4,248,000
February	779,000	472,000	1,494,000	1,183,000	10,916,000	9,108,000	10,623,000	10,960,000	5,475,000	4,824,000
March	1,224,000	788,000	1,637,000	1,209,000	15,900,000	10,889,000	11,437,000	8,375,000	6,666,000	5,738,000
April	2,446,000	1,659,000	1,369,000	1,376,000	18,810,000	12,308,000	12,373,000	9,831,000	7,219,000	6,717,000
May	3,575,000	3,041,000	1,807,000	1,429,000	20,090,000	12,849,000	14,310,000	10,231,000	8,613,000	7,688,000
June	3,943,000	3,573,000	1,962,000	1,595,000	14,666,000	12,771,000	14,724,000	11,266,000	9,610,000	8,607,000
July	4,785,000	4,238,000	1,922,000	1,755,000	11,327,000	13,296,000	17,866,000	12,807,000	11,278,000	9,692,000
August	4,924,000	4,837,000	1,988,000	1,879,000	12,984,000	15,063,000	17,051,000	14,555,000	11,130,000	9,670,000
September	4,334,000	3,856,000	1,887,000	1,922,000	17,165,000	13,115,000	17,165,000	15,072,000	10,367,000	9,053,000
October	3,490,000	3,379,000	1,986,000	1,810,000	16,749,000	14,697,000	17,909,000	13,379,000	9,443,000	7,761,000
November	2,866,000	2,565,000	1,804,000	1,836,000	16,666,000	14,545,000	15,717,000	14,205,000	7,958,000	6,696,000
December	2,298,000	1,547,000	1,691,000	1,774,000	16,532,000	14,174,000	16,789,000	14,260,000	7,948,000	5,754,000
Total	35,799,000	30,627,000	20,994,000	18,797,000	183,963,000	153,492,000	176,753,000	145,295,000	101,020,000	86,448,000
Percent of gain	16.88	.....	11.69	.....	19.19	.....	21.65	.....	16.85	.....

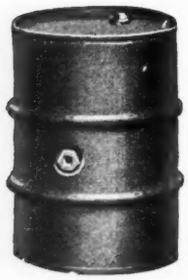
	SO. CAROLINA		TEXAS		UTAH		VERMONT		VIRGINIA	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	6,191,000	5,263,000	34,838,000	25,356,000	2,094,000	2,075,000	796,000	690,000	7,332,000	7,261,000
February	5,406,000	4,528,000	31,995,000	19,937,000	1,796,000	1,231,000	420,000	386,000	6,422,000	5,760,000
March	5,039,000	5,434,000	35,974,000	24,263,000	2,369,000	2,069,000	675,000	580,000	8,679,000	6,890,000
April	7,966,000	5,710,000	36,434,000	27,868,000	1,380,000	1,905,000	1,667,000	998,000	10,356,000	8,745,000
May	6,884,000	6,389,000	38,376,000	29,972,000	2,840,000	2,534,000	2,680,000	2,225,000	2,345,000	11,102,000
June	6,854,000	5,951,000	40,084,000	31,706,000	3,519,000	2,814,000	2,999,000	2,707,000	11,491,000	9,567,000
July	7,501,000	6,480,000	42,635,000	36,264,000	3,953,000	2,880,000	3,481,000	3,125,000	12,633,000	10,898,000
August	7,902,000	7,157,000	42,299,000	37,163,000	2,490,000	3,164,000	3,657,000	3,487,000	13,130,000	11,656,000
September	7,637,000	6,077,000	41,759,000	33,761,000	2,990,000	2,568,000	3,324,000	2,895,000	12,496,000	10,280,000
October	8,076,000	7,038,000	39,835,000	37,165,000	3,077,000	2,578,000	2,715,000	2,991,000	11,845,000	10,847,000
November	7,164,000	7,011,000	38,755,000	36,567,000	2,479,000	2,506,000	2,026,000	2,164,000	10,978,000	9,844,000
December	7,370,000	7,070,000	41,195,000	34,857,000	2,871,000	1,856,000	1,422,000	1,145,000	11,552,000	9,591,000
Total	83,990,000	74,108,000	464,179,000	374,879,000	31,858,000	28,180,000	25,862,000	23,393,000	128,259,000	110,439,000
Percent of gain	13.33	.....	23.82	.....	13.04	.....	10.55	.....	16.13	.....

the leader in the per car average since the first statistics of this sort were compiled by National Petroleum News three years ago. It continued to increase its margin as leader last year with a per car average of 730.8 gallons. Of course, every Florida owned automobile did not burn that much gasoline. The high average was brought about by the invasion of the state by thousands of cars from every other part of the United States and Canada.

It is doubtful, now that boom days apparently are past, that the high Florida average of 1925 will be maintained this year. It seems reasonable, however, to expect that the total gallonage volume of the state for 1925 will be maintained or nearly maintained in 1926, because curtailment of real estate speculation cannot deprive the state of its natural growth.

67.56 Per Cent Gain in Florida

IN total gallonage, as reported by the tax officials of Florida, the gain in 1925 was 67.56 per cent over 1924. This was by far the largest increase reported by any state. Other notable gains were 38.27 per cent by Arkansas, 39.47 per cent by Mississippi, 41.23 per cent



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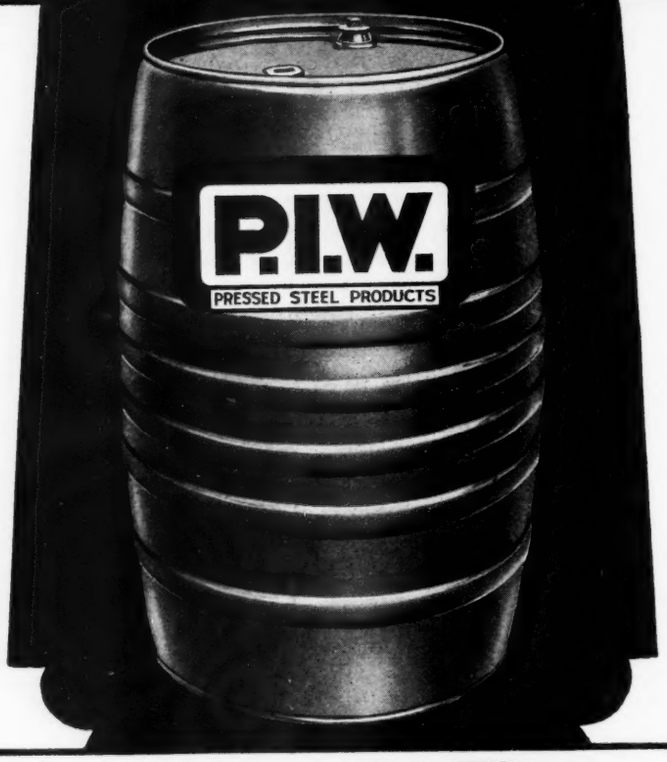

Bilged Steel Barrels·

An I. C. C. Package with welded Chime and Hoops spun into the metal.

Users of steel shipping containers will find in G. E. M. Bilged Steel Barrels, those features essential to good shipping precaution.

The Chimes are welded and rolled.

The top and bottom Leads are welded to the shell and then rolled into a chime ring to protect each welded head.

The Hoops are spun into the metal.

The advantage of the hoops from the standpoints of utility and strength is apparent. By our special manufacturing method these hoops are spun without weakening or thinning the shell in any respect.

P. I. W. Steel Barrels and various types of light gauge containers and I. C. C. Drums meet every shipping requirement. If we haven't the exact container you need, we'll build it.

THE PETROLEUM IRON WORKS CO.
Pressed Steel Products Dept.
SHARON, PENN.

Plants: Sharon, Pennsylvania and Beaumont, Texas
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1925 Average Gasoline Consumption Per Car, by States

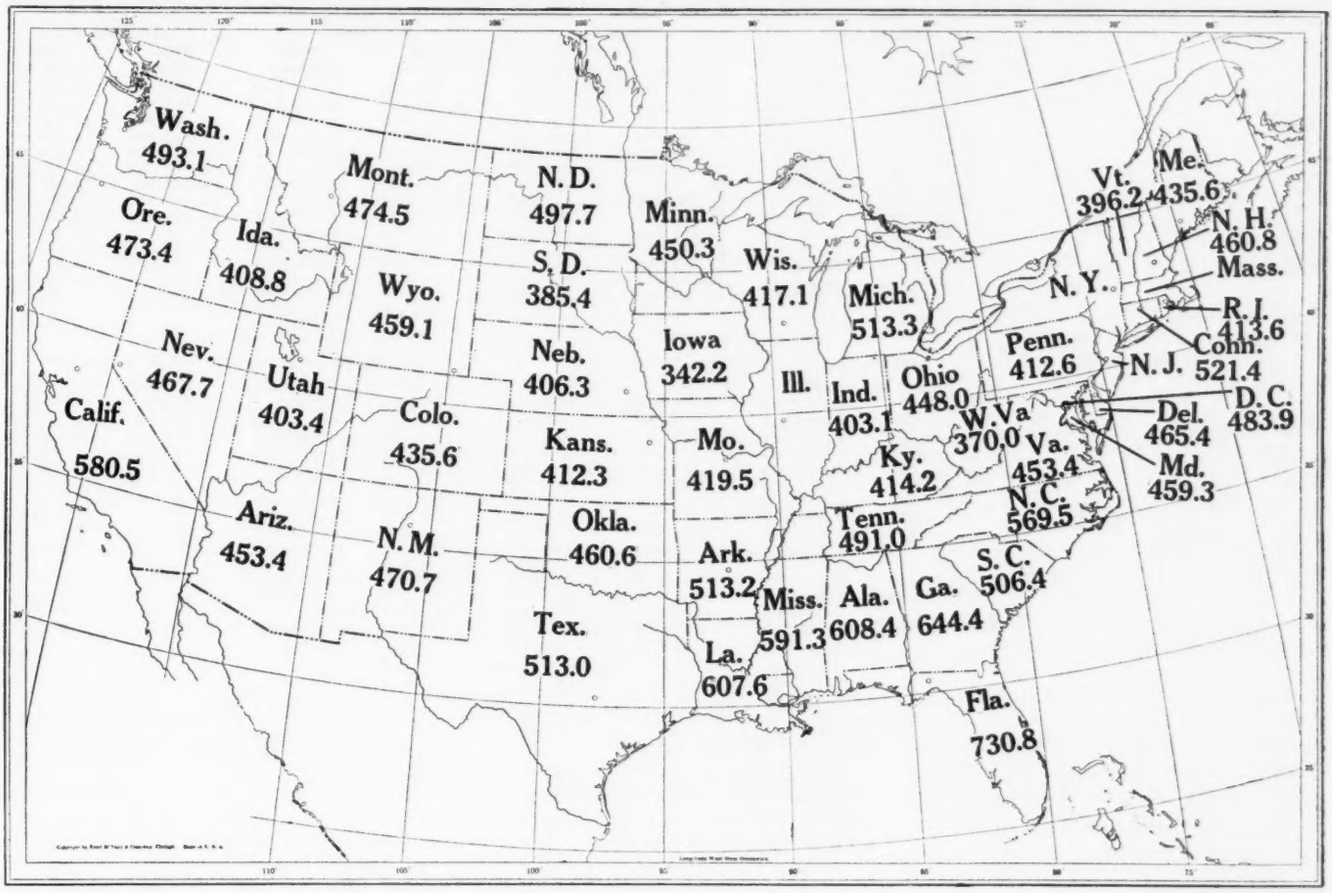

Table 2 (Cont'd.)—Comparative Gasoline Gallonage Statistics

	WASHINGTON		W. VIRGINIA		WYOMING	
	1925 Gallons	1924 Gallons	192 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	9,028,000	7,358,000	3,326,000	3,096,000	1,079,000	1,227,000
February	9,343,000	8,559,000	3,023,000	2,417,000	1,577,000	842,000
March	11,593,000	10,422,000	4,265,000	3,158,000	1,189,000	1,429,000
April	12,397,000	11,697,000	6,147,000	4,698,000	1,149,000	1,084,000
May	14,674,000	13,111,000	6,991,000	5,279,000	2,060,000	1,980,000
June	15,257,000	13,663,000	8,573,000	6,328,000	2,185,000	2,096,000
July	17,159,000	15,130,000	8,610,000	7,278,000	2,825,000	2,641,000
August	17,740,000	15,677,000	8,943,000	7,546,000	2,415,000	2,596,000
September	15,834,000	13,887,000	8,680,000	6,621,000	2,088,000	1,733,000
October	14,309,000	12,781,000	7,456,000	7,247,000	1,577,000	2,094,000
November	12,950,000	10,813,000	5,645,000	5,704,000	1,535,000	1,526,000
December	12,725,000	9,993,000	5,649,000	4,482,000	1,121,000	1,292,000
Total	163,009,000	143,091,000	77,307,000	63,854,000	20,800,000	20,540,000
Percent of gain	13.99	.....	22.63	.....	1.26	.....

by Tennessee, and 30.32 per cent by North Dakota.

One of the remarkable things brought out by the tax figures was a gain in the per car consumption of gasoline in South Dakota from 299.4 gallons in 1924 to 385.4 gallons last year. Inspection figures showed an increase of 12,000,000 gallons last year over 1924, but tax figures showed an increase of 18,800,000 gallons. The state was not in the gasoline business most of last year but was a demoralizing market factor the year previous.

When Independent jobbers brought suit to have state officials restrained from doing a gasoline business it was charged that the gasoline taxes were not being paid on gasoline sold through state stations. The 1925 figures indicate the state received taxes on a larger proportion of gasoline consumed in South Dakota than in 1924.

Shows Tax Statistics

TABLE No. 1 gives the amount of tax per gallon in the 44 states and the District of Columbia last year; where two tax rate figures appear the

Table 4—Monthly 1925 Gallonage in New Gasoline Tax States, Compiled from Tax Reports

	IOWA 1925 Gallons	MICHIGAN 1925 Gallons	NEBRASKA 1925 Gallons	OHIO 1925 Gallons	RHODE ISLAND 1925 Gallons	WISCONSIN 1925 Gallons
January	.....	.....	.....	.....	.....	.....
February	.....	20,529,000	.....	.....	.....	.....
March	.....	25,345,000	.....	.....	.....	.....
April	6,384,000	35,390,000	9,955,000	.....	.....	16,068,000
May	21,011,000	41,793,000	11,809,000	52,413,000	.....	22,362,000
June	21,548,000	46,217,000	12,297,000	56,246,000	4,522,000	25,227,000
July	25,131,000	50,083,000	14,296,000	60,178,000	5,063,000	28,115,000
August	26,570,000	51,272,000	14,275,000	61,748,000	4,966,000	28,403,000
September	22,641,000	47,374,000	14,343,000	58,363,000	4,701,000	26,011,000
October	20,834,000	43,818,000	13,615,000	52,906,000	4,370,000	23,842,000
November	16,651,000	39,132,000	11,062,000	48,061,000	4,187,000	20,306,000
December	17,639,000	36,165,000	10,495,000	45,814,000	3,967,000	16,879,000

Table 3—Comparative Gasoline Gallonage Statistics, States Reporting Tax Quarterly

	CALIFORNIA		MONTANA		PENNSYLVANIA		TENNESSEE	
	1925 Gallons	1924 Gallons	1925 Gallons	192₄ Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
First Quarter	172,273,000	165,420,000	7,813,000	4,744,000	79,271,000	84,760,000	25,213,000	20,743,000
Second Quarter	203,279,000	188,517,000	10,457,000	8,174,000	150,734,000	112,324,000	35,617,000	15,845,000
Third Quarter	220,048,000	198,499,000	14,713,000	12,650,000	74,726,000	128,205,000	31,300,000	22,611,000
Fourth Quarter	216,060,000	176,666,000	8,385,000	8,817,000	220,347,000	129,188,000	29,870,000	27,180,000
Total	811,660,000	729,102,000	41,368,000	34,385,000	525,078,000	454,477,000	122,000,000	86,379,000
Percent of gain	11.32	.....	20.30	.....	15.53	.....	41.23	.....

Table 5—Comparative Gasoline Gallonage, Compiled from State Inspection Reports

	COLORADO		GEORGIA		KANSAS		MINNESOTA	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	6,562,000	8,402,000	10,331,000	9,998,000	14,399,000	12,169,000	11,316,000	10,617,000
February	6,352,000	5,582,000	10,720,000	7,976,000	14,625,000	9,441,000	11,881,000	8,170,000
March	6,247,000	5,605,000	10,358,000	8,469,000	14,957,000	10,438,000	12,509,000	11,235,000
April	6,772,000	4,274,000	11,265,000	9,533,000	17,933,000	13,679,000	22,367,000	15,805,000
May	8,420,000	7,157,999	12,226,000	10,433,000	17,398,000	15,115,000	21,845,000	17,913,000
June	10,736,000	7,453,000	11,528,000	9,661,000	21,013,000	15,649,000	23,912,000	20,942,000
July	9,928,000	9,567,000	12,808,000	10,655,000	21,584,000	21,539,000	28,256,000	25,767,000
August	9,521,000	10,404,000	12,655,000	10,500,000	21,053,000	21,032,000	26,248,000	24,082,000
September	12,499,000	10,087,000	13,910,000	12,006,000	19,285,000	17,732,000	26,440,000	24,207,000
October	8,068,000	8,699,000	13,638,000	11,108,000	17,165,000	19,307,000	23,110,000	22,329,000
November	6,008,000	7,672,000	12,721,000	11,518,000	16,033,000	15,730,000	20,289,000	19,383,000
December	7,630,000	7,696,000	13,918,000	11,646,000	16,283,000	13,704,000	17,804,000	13,011,000
Total	98,743,000	92,598,000	146,078,000	123,503,000	211,728,000	185,535,000	245,977,000	213,461,000
Percent of gain	6.63	.....	18.28	.....	14.11	.....	15.23	.....

	MISSOURI		NEBRASKA		NO. DAKOTA		SO. DAKOTA	
	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons	1925 Gallons	1924 Gallons
January	17,710,000	12,477,000	8,508,000	9,142,000	2,480,000	1,445,000	3,294,000	4,969,000
February	15,686,000	12,898,000	8,269,000	9,475,000	3,816,000	1,963,000	3,091,000	2,604,000
March	14,951,000	16,401,000	7,263,000	5,930,000	2,739,000	2,826,000	4,101,000	2,915,000
April	16,717,000	11,060,000	12,665,000	8,026,000	6,178,000	3,318,000	5,930,000	3,663,000
May	25,221,000	11,882,000	11,210,000	10,849,000	5,451,000	3,787,000	6,269,000	4,995,000
June	18,908,000	17,345,000	14,742,000	9,577,000	4,521,000	4,490,000	7,334,000	5,199,000
July	31,773,000	25,317,000	13,141,000	9,168,000	7,680,000	5,272,000	7,360,000	5,955,000
August	30,220,000	29,537,000	13,550,000	13,497,000	8,765,000	5,957,000	9,211,000	7,666,000
September	21,191,000	16,870,000	12,676,000	10,613,000	9,291,000	8,576,000	9,602,000	8,551,000
October	28,270,000	24,599,000	14,795,000	10,734,000	6,327,000	6,465,000	6,847,000	7,501,000
November	22,157,000	25,082,000	11,904,000	15,962,000	4,619,000	4,648,000	5,802,000	5,525,000
December	21,360,000	27,816,000	12,833,000	11,304,000	4,501,000	2,188,000	6,323,000	4,259,000
Total	259,164,000	231,284,000	141,556,000	124,277,000	66,368,000	50,935,000	75,164,000	63,802,000
Percent of gain	12.05	.....	13.89	.....	30.32	.....	17.81	.....

first figure is the tax in effect at the first of last year; the second is the rate established by the legislature during the year. The table also contains the net amount of gasoline tax receipts, the net number of gallons of gasoline taxed, number of gallons exempted from taxation, cost of collection in several states where such information is available. In other states collection costs are so intertwined with other collection costs that actual expense in collecting gasoline taxes cannot be separated. Automobile registrations on Dec. 31, 1925, as contained in a recent revised list of the Bureau of Public Roads, Department of Agriculture, also are shown with the average consumption of gasoline per car in 1925 and 1924.

Gross Gallonage Figures

TABLE No. 2 contains monthly gross gallonage statistics as collected by the American Petroleum Institute from state tax officials. Table 3 contains gallonage statistics by quarters from four states with comparisons with corresponding quarters of 1924.

Table 4 gives the monthly gallonage reports in states that adopted gasoline taxes last year. Table 5 is a comparison of monthly inspection figures from eight states for the last two years. These figures also were collected by the A.P.I.

Cost of collecting taxes varies widely. Some tax officials report the collection is done with the same force employed by their departments before they had to handle gasoline taxes. In other states the collection cost runs high. It was approximately $65,000 in Pennsylvania last year. In Missouri it was $26,837; $15,284 in New Mexico; $13,021 in Oklahoma; $12,856 in Tennessee, and $10,500 in Texas. In other states from which cost information was obtained the costs ran less than $10,000.

Exemptions are high in some states, Michigan, for instance, where a great amount of tax exempt gasoline is used by the automobile factories.

Buses and Taxicabs in the United States on Dec. 31, 1925, were distributed as follows:

States	Buses	Taxicabs
Alabama	778	2,710
Arizona	569	568
Arkansas	378	2,398
California	4,017	5,210
Colorado	816	2,416
Connecticut	904	2,301
Delaware	138	192
Dist. of Columbia	265	1,182
Florida	1,253	3,356
Georgia	715	1,969
Idaho	570	558
Illinois	3,289	10,374
Indiana	1,896	3,648
Iowa	1,321	2,284
Kansas	696	2,140
Kentucky	1,120	2,981
Louisiana	672	1,477
Maine	376	2,716
Maryland	636	3,477
Massachusetts	1,857	6,254
Michigan	2,161	3,325
Minnesota	932	1,833
Mississippi	2,049	1,555
Missouri	1,407	4,821
Montana	323	583
Nebraska	323	1,256
Nevada	175	137
New Hampshire	635	1,903
New Jersey	2,401	5,367
New Mexico	308	391
New York	3,966	26,079
North Carolina	2,446	2,102
North Dakota	1,078	375
Ohio	4,103	5,354
Oklahoma	1,231	2,212
Oregon	698	732
Pennsylvania	6,115	6,937
Rhode Island	262	1,431
South Carolina	473	1,646
South Dakota	205	452
Tennessee	720	2,301
Texas	1,260	6,454
Utah	460	312
Vermont	153	1,134
Virginia	1,373	2,543
Washington	1,574	1,633
West Virginia	856	1,569
Wisconsin	820	2,535
Wyoming	553	347
Total	61,326	145,530

The per car average of consumption in the 44 states and District of Columbia, last year was 476.1 gallons. Average in 1924 was 457.0 gallons. Increased use of buses and trucking may account for the higher average. Buses are large users of gasoline, some getting only four or five miles to the gallon and few more than 10 miles. Extensive use of buses in Florida probably was a large factor in boosting that state's average last year.

Many railroads are using trucks to handle short haul less than carload freight, and number of interurban freight lines has increased. General economic conditions which last year provided every automobile owner with sufficient money to do more touring than in some previous years, formed another factor.

Casinghead Markets Slumps

LOS ANGELES, April 23.—Curtailment in buying of casinghead gasoline by big companies in the last 10 days has resulted in a softening of this market. Prices of natural gasoline which have been selling as high as 1 to 1½ cents under the service station price of motor gasoline, have tumbled as much as 1½ cents.

The principal reasons is the approach of warmer weather when oil companies do not find it necessary to make highly blended motor fuels.

Gasoline shipments from California to the east coast in the first three weeks of April have been slightly below the average.

ROCKVILLE, MO.—Williams Oil Co. has opened a new service station here and reports enjoying good business whenever weather permits, as the dirt roads are muddy at present, with no hard service roads in the vicinity of the filling station.

Missouri Oil Men Discuss Troubles From Inroads of Gasoline Bridge-Runner

By Ward K. Halbert
N. P. N. Staff Writer

ST. LOUIS, April 30

BRIDGE-RUNNERS were the topic of the most interesting discussion at the regional meeting of Missouri oil jobbers held in the Statler Hotel at St. Louis April 20. They constitute the greatest source of grief to the oil men of southeastern Missouri, even cause more trouble and loss of money and business than gasoline bootleggers in other sections because of natural advantages at this point—i. e., advantages for the bridge- runner.

A bridge-runner is a species of bootlegger that thrives in St. Louis by purchasing gasoline in Illinois where the tank wagon price is 16.1 cents (taking East St. Louis, Ill., as an example), sneaking it across the Mississippi river via the free bridge and selling it on the Missouri side at 18.6 cents. Standard Oil Co. of Indiana maintains equal prices on both sides of the river but the 2½-cent difference is tax. In Illinois there is no gasoline tax while in Missouri the state tax is 2 cents and the city of St. Louis taxes gasoline sales ½ cent per gallon.

Of course, the bridge-runners do not simply make their money by purchasing gasoline on one side of the river, evading the tax and delivering it on the other side. In St. Louis they do not sell at the posted St. Louis price. They cut prices in order to attract business into sections of town where they are able to save money on overhead marketing cost. Each individual bridge-runner has his own original way of coming out on the proposition but in the last analysis it is a matter of beating the state out of the tax and the oil men out of their patronage At any point along a state line where the gasoline tax is higher on one side than on the other, situations of this sort are likely to develop, and William A. McAtee, state oil inspector of Missouri, says they do develop on almost all sides of the state. St. Louis, Mo., however, is the most aggravated point because here a large city is on the high-tax side of the river and a railroad center on the other. The problem is not such a big one where state lines pass through rural communities, or where big towns are situated on the side of the line where tax is low.

Much Tax Is Lost

A. R. CHAPPELL, of the R. J. Brown Petroleum Co., estimates that 10,000 gallons of gasoline is brought into St. Louis every day from Illinois, tax free. That figures a loss to the state of about $200 a day and a loss of $50 a day to the city. Of course, this might easily be controlled if it were all brought across the bridge in gasoline truck tanks such as are used regularly in delivering gasoline to filling stations. But it is not. In fact a good portion of it is brought across the bridge in the fuel tanks of pleasure cars and trucks.

This complicates the situation to a point where it is hard to cope with. Bus lines out of St. Louis to Illinois points, no matter which bridge they use, naturally fill their capacious tanks on the cheap side of the bridge. Industrial trucks make it a point to get filled on the Illinois side of the river when possible and if they have regular trips across the bridge they buy regularly in Illinois.

Such practices can hardly be interfered with, but it goes further than that and as the situation stands now, a vast number of motors cross the bridge every day for no purpose but to get a gasoline fill and return.

The gasoline tax department in Missouri is in charge of the oil inspector, Mr. McAtee, who states he has a plan in process of development whereby he hopes to rectify the matter. However, he has not hinted to any oil man what the plan may be. Naturally there is no legal authority for a Missouri official to exercise in Illinois. It is patently impractical to attempt to collect gasoline taxes from motorists on all trans-Mississippi bridges, tourists and all. So the problem resolves itseslf into detecting and convicting the Missouri citizens who wilfully evade the law for the betterment of their own personal bank rolls.

Enforcing Tax Law

GEORGE S. ALLEE, secretary of the Missouri jobbers, called the meeting for the purpose of allowing the oil men in this section to hear Mr. McAtee discuss the enforcement of the gasoline tax law. Twenty to 30 oil men, mostly operators of St. Louis and the immediate territory, gathered in the Daniel Boone room shortly before noon. Mr. Allee started proceedings by telling the jobbers the purpose of the meeting and incidentally warning them to prepare for a fight against the enactment of an additional 2-cent gasoline tax law already hatched up by politicians, ready to spring at the next session of the legislature.

Mr. Allee did not know when he called the meeting that he was giving the St. Louis Petroleum Club a chance to celebrate its tenth anniversary. The group which was organized 10 years ago by Elmer Keitel of the Columbia Oil Co.; Herman Strecker of the Modern Oil & Supply Co.; Reed Chappell of J. R. Brown Petroleum Co., and the late Gus Stocke of the St. Louis Oil Co., now has 60 active members. The club grew out of a volunteer committee who cooperated to arrange entertainment for the 1916 national convention of the Central Oil Jobbers Association, not now in existence. On this birthday the club was host to the visiting Missouri jobbers at luncheon.

In the afternoon Mr. McAtee came before the oil men as per schedule and recounted some of the incidents relative to the passage of the Missouri tax law. In its original form the 2-cent tax was a sales tax, absolutely. Gasoline brought into the state by large consumers for their own use was exempted. Even the oil jobbers did not have to pay tax on the gasoline they used in their own trucks. That, however, was changed later by the legislature. Now the law is interpreted as a tax upon the motorist for the privilege of using the state roads, and the money is spent on the roads for construction and maintenance.

The Controverted Form 2

IN reporting monthly to the oil department, Missouri jobbers have to make out two report blanks, viz., Form 2 and Form 2a. There is no protest from the trade against making out Form 2a. The oil men do, however, consider it sufficient and some of them protest vigorously against making out Form 2 which conveys to the department quite a little information. The oil men think such information as a list of wholesale customers, for instance, is useless to the department and dangerous to themselves in case the information should leak out to a competitor.

Form 2a, the report which the oil men largely consider sufficient, is simple enough. On it the oil man notes the number of gallons of gasoline he had on hand at the first of the month, adds to that the number of gallons received during the month, and from that total makes four deductions, (1) the gasoline sold at retail, (2) the gasoline sold from tank wagon, (3) the gasoline used in his own business, and (4) loss during the month by evaporation and other outage.

It happens that the Missouri law does not say a word about outage and evaporation. In an effort to be fair, both to the oil men and the state, Mr. McAtee has tried to arrive at what he considers a fair outage and he has settled upon 1 per cent of the material taxed. Sometimes more is allowed, but not often because when Mr. McAtee passes along to the state treasurer the report of an oil man who shows more than one per cent per month outage, he gives the report his official disapproval. Unanimously the oil men think the 1 per cent allowance is too little. That the oil men are right, is indicated by gasoline tax laws of other

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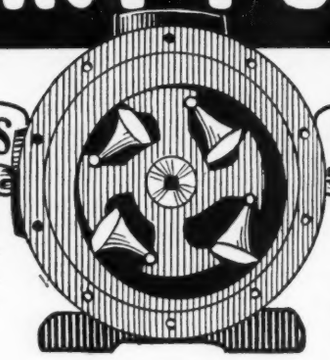

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states wherein as much as 3 per cent outage is allowed.

The outage matter is not subject to so much criticism by the oil men as the objectionable Form 2. It requires the oil company to list its own sales to consumers, classifying them into tank wagon and filling station sales. Each service station must be listed with its address and the gallonage it sold in any given month. Each tank truck must be identified by its number and the route it covered if it sells to the consuming trade. Then, in addition to that, customers buying from tank wagon for resale have to be listed.

Mr. McAtee is a comparatively new oil inspector. And, of course, he is not responsible for the law. However, he vigorously defends Form 2, saying it makes his work easier (or rather makes it possible with the small force of employes the state allows his department). And in justice to the inspector it must be said that he has persuaded the governor to let him keep the files of Form 2 under lock and key, not subject to inspection by any outsider except upon court order.

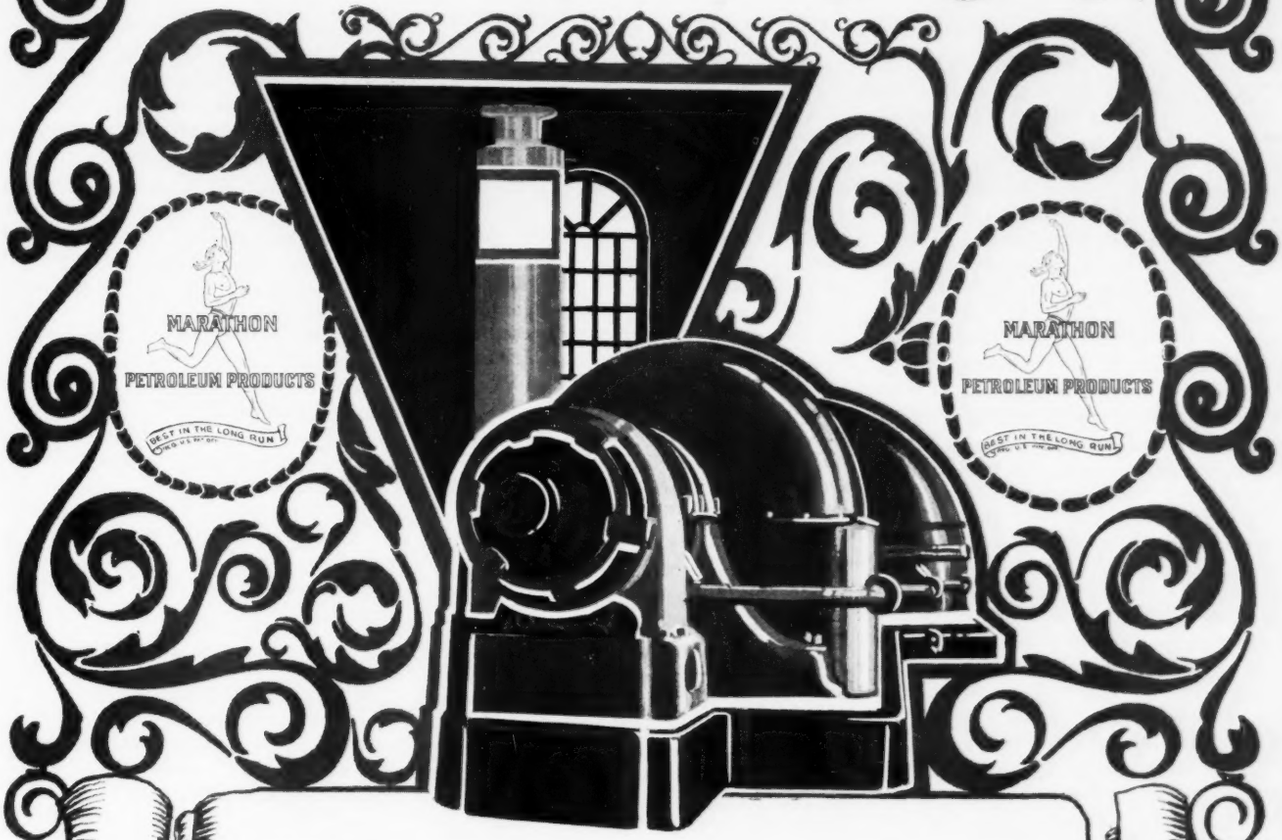
Jobbers Pay Penalty

IN spite of this effort of Mr. McAtee to keep Form 2 confidential, several of the oil men have refused to make it out. There is one way, under the law, that an oil man can get around giving the state his business secrets on Form 2. That way is to pay tax on all the gasoline received. Of course the oil men who pursue that course pay more tax than they would if they paid only on the gasoline used on the roads, but they consider it worth the money to keep their secrets to themselves.

Mr. McAtee stated to the oil men at this meeting that if they did not want to submit Form 2, and preferred to pay tax on gasoline receipts, he would allow them their outage if they would accompany Form 2a with a letter to him stating what their actual outage had been. He declines to make even the 1 per cent outage an arbitrary rule.

St. Louis jobbers state in private conversation that the law as it stands now was not written by an oil man nor an oil man's attorney, and moreover was framed by some legislator with small knowledge of the oil marketing business. This accounts, they say, for its awkwardness of execution. At another legislature they hope to substitute this law with one similar to that of Minnesota, where the oil jobber pays tax on gasoline receipts, less a specified outage. Under such a system the amount of the tax would not be changed materially but the oil men would be saved much time and trouble and the state saved the office expense involved in the work of checking one oil man's report against another to be sure every distributor is paying his proportional share. In his capacity as oil inspector in Missouri, Mr. McAtee boasts that he has held the tax down to 1 cent per barrel in spite of the fact that the inspection law permits him to advance the fee 1½ cents a gallon if it is necessary to operate that department.

FIGHTING FRICTION



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Electric Power Service in San Joaquin Valley District Cuts Cost

By H. N. Carroll
Sales Engineer
San Joaquin Light and Power Corp., Fresno, California.

CRUDE oil is a source of power. Accompanying crude oil usually is found natural gas—another source of power. Because these products require considerable power in their development, production and handling, it would, therefore, appear that the natural thing to do would be to use natural gas and crude oil engines for all oil field power purposes. But, what often appears on the surface to be the natural and logical thing to do, proves the wrong thing to do when analyzed by men who are guided solely by sound economics.

As a result of the analysis and study of various power costs, we find the oil fields of Fresno, Kern and San Luis Obispo counties today are using 26,000 horsepower in electric service. This service is being used in practically every department of oil field operations. But this relatively large use of electric power in these fields did not come on the lines in any short period of time. It has required eighteen years of constant sales effort on the part of the electrical industry to bring about this result.

The idea of using a portion of the fuels being produced to produce power for oil field operations seemed the "natural and logical thing to do." This fact became the sales resistance that has compelled the electrical industry to fight every step of their advance into the business of furnishing power to the oil fields. This resistance was carried into the many discussions of the use of electricity in the oil fields and the burden of proof that electrical drive was economical was always thrown on the shoulders of the electrical industry.

Much has been proved, but much remains yet to be done before the oil industry reaps all the benefits to be derived from the use of electric power, not only in pumping, drilling and field work, but in shipping lines as well.

At the recent meeting of the American Petroleum Institute held at Los Angeles, it was stated by the Mid-Continent producers that the oil companies must be assured reasonable continuity of service if the power companies expect to increase their oil field load. This demand is just and reasonable. The possible loss in production or even lost holes in drilling resulting from interruptions in power service are important elements that must receive consideration.

Service Standards Good

IF the number of wells at the present time served by the San Joaquin Light and Power Corp. are any criterion, the service is evidently up to proper standards. The following data is the result of a recent check of the motorized wells in the territory served compared to the number of active producing wells as reported by the American Petroleum Institute, month of May, 1925, (Table No. 1).

It is also quite interesting to study the following data showing the lost time of one of the large producing companies in the Midway-Sunset fields.

The study of this particular company's case was made for the sole reason that their records are so kept that it was possible to obtain the necessary data without going to the trouble of starting new records. This company is operating on a wholesale or substation rate, the current being metered at one point at transmission voltages. The lines and transformers beyond the metering station are owned by the consumer. There are thirteen such metering stations in the Midway fields, each with a connected load ranging from 300 horsepower to 1500 horsepower, used in oil well pumping, and not including lighting, machine shops, ice machines, shipping pumps, etc.

Shutdown Time Minimized

INTERRUPTIONS of service may, therefore, quite naturally be directly charged to the power company or to the failure of the consumer's distribution system. During the year 1925 this company had a daily average of 114.7 wells pumping with motors. These wells were

Table No. 1

Data on Motorized Wells of San Joaquin Light and Power Corp.

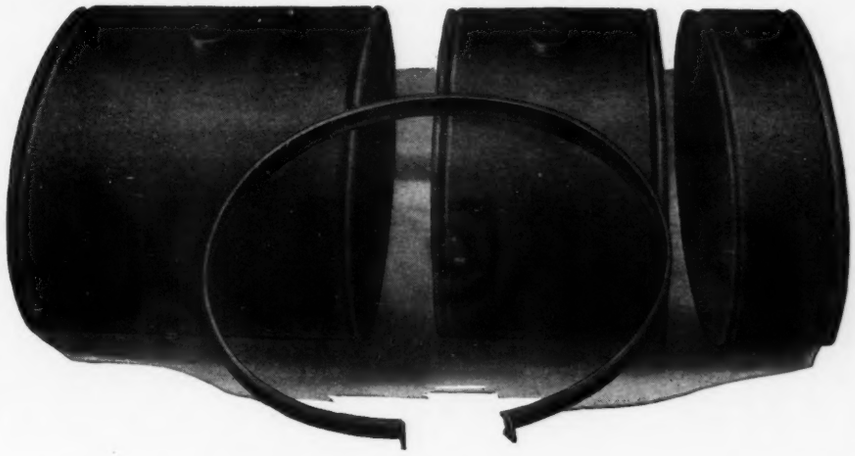
	Electrified Wells	Active Producing	% Electrified
Taft	1030	3,894	26%
Kern River	1406	2,184	63%
Coalinga	681	1,047	65%
Santa Maria	233	312	74%
	3350	7,437	45%

*Includes McKittrick, Midway-Sunset, Elk Hills and Lost Hills-Belridge Fields.

Table No. 3

Power Costs for Pumping Oil Wells in Midway-Sunset Field—Kern County—California

No. Motors	Total H.P.	No. Wells	Average Depth	Av. Mo. Prod. Bbls.	Av. Mo. K.W.H.	Av. Mo. Bills	K.W.H. Per Well Per Day	K.W.H. Per Bbl.	Cost Per Well Per Day	Cost Per Bbl.
11	67	11	650′	1,950	20,704	$ 289.50	62.7	10.6	$0.877	$0.145
2	20	2	660′	1,000	5,604	78.45	93.4	5.6	1.307	0.078
11	165	11	800′	10,500	26,272	334.50	79.6	2.5	1.013	0.032
8	120	8	800′	3,200	24,088	337.23	100.3	7.5	1.407	0.106
3	45	3	800′	1,350	10,248	143.47	113.8	7.5	1.594	0.106
3	45	3	925′	2,000	16,047	224.64	178.3	8.0	2.496	0.112
2	20	2	980′	1,800	4,786	67.00	79.7	2.6	1.116	0.037
19	285	19	1,000′	7,300	60,006	838.69	105.3	8.2	1.471	0.114
12	180	12	1,000′	5,200	17,635	246.90	48.9	3.4	0.686	0.047
27	405	27	1,000′	25,000	84,495	1,182.94	104.3	3.4	1.460	0.047
10	100	10	1,100′	8,200	20,462	286.47	68.2	2.5	0.954	0.035
15	225	15	1,150′	21,000	57,200	800.08	127.1	2.6	1.777	0.038
13	195	13	1,200′	27,500	36,575	547.05	93.7	1.3	1.403	0.019
3	30	3	1,200′	2,000	12,036	169.35	133.7	6.0	1.881	0.085
2	30	2	1,250′	1,500	11,812	165.37	183.5	7.8	2.756	0.110
35	360	35	1,500′	27,000	139,192	1,323.50	132.5	5.1	1.260	0.049
17	255	17	2,000′	25,500	82,000	925.86	160.8	3.2	1.815	0.036
3	45	3	2,400′	6,600	10,660	149.24	118.4	1.6	2.658	0.023
3	45	3	2,733′	5,250	13,140	183.96	146.0	2.5	2.044	0.035
4	80	4	3,150′	14,100	20,769	370.25	173.0	1.4	3.085	0.026
203	2,717	203	318,054′	204,150	673,731	88,664.45				
Averages			1,571′	1,005	3,319	433.22	110.6	3.3	1.422	0.0424



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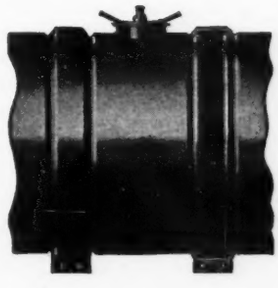

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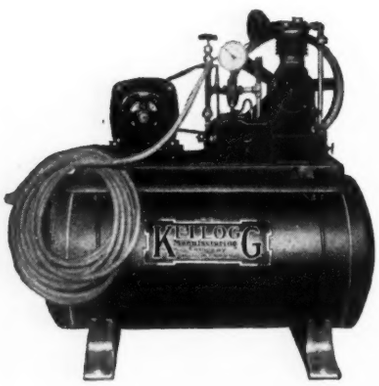
On the busiest Sunday or holiday when the demands on your filling stations are severest and most every motorist wants air in his tires, Kellogg EM 251-S will always work without a murmur.

Users tell us that for constant performance the EM 251-S cannot be duplicated at anywhere near the price.

Equip your stations with the 251-S. You will find it pumps more air and less oil.

Kellogg Manufacturing Company
Rochester, N. Y.

½ horse power motor 32 gallon tank Automatic control Completely equipped. **$176.00**



KELLOGG COMPRESSORS

Table No. 2

Data on Interruptions of Power Service in Midway-Sunset Oil Field for Year 1925

Month	Well Hrs. Lost Acct. S.J. L. & P. Corp'n.	Well Hrs. Lost Acct. Operating Co.	Well Hrs. Lost Total	Wells Total	Well Hrs. Total	Percentage Well Hrs. Lost
January	349	8	357	117	87,048	.41
February	245	32	277	118	79,296	.35
March	245	142	387	116	86,304	.45
April	266	29	295	116	83,520	.35
May	236	7	243	116	86,304	.28
June	144	85	229	117	84,240	.27
July	*860	187	1047	117	87,048	1.20
August	228	0	228	114	84,816	.27
September	45	0	45	116	83,520	.054
October	45	763	808	115	85,560	.94
November	390	234	624	114	82,080	.76
December	40	0	40	101	75,144	.053
TOTALS	3093	1487	4580	1377	1,004,880	
AVERAGES	257.7	122.2	381.6	114.7	83,740	.45

*Bad Electrical Storm During This Month.

shut down due to power failure, an average of 381.6 well hours per month, or forty-five hundredths of one per cent of the available well hours. This forty-five hundredths of one per cent means three hours, fourteen minutes and twenty-four seconds per month, or six minutes and twenty-nine seconds per day.

When you consider that a momentary interruption of power that will trip the low voltage release requires an average of 25 minutes per well for the pumpers to get them started again, this record is exceptionally good. It will be noted, for example, that in September, October and December, there was only one flash in each month. (See table No. 2)

A survey made in 1924 by this company showed that the average daily power cost for pumping wells in this field was $1.42 per well per day. This figure was arrived at from the actual experience of 20 different companies operating 203 wells at an average depth of 1571 feet. In this survey, we found that there were no installations where the current consumed was used for any one given oil field operation. In practically all cases, the current supplied was being used for line pumps, machine shops, or drilling motors, as well as pumping wells, and it was impossible to get an average cost for pumping over the entire field. The 20 installations used in the following tabulation, were not selected in an effort to prove a case for motor drive, but for the reason that in these cases, the current consumed was not used for any purpose other than pumping and light. (See table No. 3)

Motors having been used longer for pumping purposes than any other form of operation, it is very easy to obtain authentic cost data for this method of drive. The following results of a test made by one of the largest producing companies in the Midway fields, show some very interesting comparisons in the cost of pumping oil wells with three different methods of drive. This test was made over a period of eight months' time, and included labor, repairs, fuel, oil, hauling, etc., but did not include interest on the investment or depreciation on equipment which would tend to further increase the favorable showing made by motors. (See table No. 4)

Some of the larger oil companies operating in the Midway Oil Fields are also showing some remarkably low power costs for the operation of motor driven shipping pumps. The following data were taken from the December records of one of the companies purchasing power under the wholesale schedule. The unit cost of power in this case being, .009890 per kilowatt hour.

The production pumps naturally work against comparatively low line pressures, that is, from 100 to 150 pounds. The shipping pumps, however, work against line pressures ranging from 150 to 700 pounds depending upon what other companies are making deliveries through the same line.

	Production Pumps	Shipping Pumps
Number of Pumps	4	5
H. P. Installed	45	300
Total K. W. H.	6680	19674
Cost of Power	$60.06	$ 195.60
K. W. H. per Barrel	.10308	.1020
Cost per Barrel	$0.0010193	$ 0.00104

In addition to these shipping pumps this company is pumping 120 wells with motors and have aside from the lighting on the various leases, machine shop and ice machine motors, and a number of electrically equipped water wells. All of this equipment is maintained by an electrician and one helper which tends very materially to increase the favorable showing made by this equipment in comparison to other methods of drive.

The conversion of main line pipe line pumping stations handling oil

Table No. 4

Cost of Pumping Wells With Three Different Methods of Drive

	Equipment	Duty	No. of Wells	Cost per Well per Day
31	Motors 15-30-H.P.	Individual Pumpers	31	$1.59
26	Gas Engine 25-H.P.	Individual Pumpers	26	2.42
	Steam	Individual Pumpers	15	6.00

from the San Joaquin Valley fields, however, presents a more difficult problem. This is due to the fact that these oils must be heated to facilitate pumping and under present practices this heating is done with exhaust steam from the steam driven pumps. If it were a straight pumping operation only, it could be done more economically with motor driven equipment, but even with the labor saving that this conversion would make possible, it is quite doubtful whether enough saving could be made to justify kicking out an investment in equipment that has been entirely depreciated on the company's books and making a new investment in motor driven equipment.

It is the consensus of opinion, however, of most pipe line superintendents in these fields that under the present schedules for power service in California that any new stations constructed could be operated more economically with motor driven equipment than with steam or internal combustion engines.

This conclusion is arrived at from the fact that due to the much smaller initial investment and the longer life of electrically driven equipment as compared with other methods of drive, the fixed charges are so greatly decreased that the actual cost of kilowatt hours as compared with other fuels, means very little in the overall cost of operation. An actual example is the case of one of the larger companies operating in the Los Angeles Basin, where a steam driven station which was originally erected at a cost of approximately $80,000.00, was replaced by a motor driven station of the same capacity for approximately $20,000.00. With the usual fixed charges of—

10% for Depreciation,
6% for Interest on Investment, and
1% for Taxes, or a total of
17%, figured on the initial investment,

there is a saving of $10,200.00 annually in fixed charges, which in itself is a considerable amount to offset the difference in the cost of kilowatt hours, as compared to fuel oil or gas. In practically all cases a labor saving can also be made with motor driven equipment, dependent of course, on the size of the station and the number of employees.

Motor driven pipe line equipment also presents a splendid opportunity for automatic control and regulation of line pressures with a resultant saving in manpower and maintenance costs of lines. This idea is being put into practice by several companies in the Los Angeles Basin where these facts are being borne out under actual working conditions.

The pipe line of the future will undoubtedly be built with stations closer together, automatically controlled; moving the same quantities of oil at lower line pressures with resultant economies in labor and maintenance.

The Truck Tank of tomorrow is here today!

"We have about Two Hundred Columbian Truck Tanks In Service"

. . . "most of them are the Partition Mounted, Three Point Supported jobs—the rest, the old cradle mounted type."

And, Mr. W. E. Anderson, President of the Winona Oil Company, Winona, Minnesota, in a letter published in The Truck Tank Hand Book, gives the following as some of the reasons why his company long ago standardized on Columbian Truck Tanks.

"As 75 per cent of our trucks are operated in the country, we have a fine opportunity to compare the two types. You no doubt will be interested to know the Three Point Supported tanks are in every respect the more durable, economical and convenient to handle."

"Broken truck springs always were a frequent occurrence on trucks under the old cradle mounted tanks. *We have never yet had a broken truck spring under a Three Point Supported truck tank.*"

COLUMBIAN STEEL TANK COMPANY
EST'D 1894
TANKS FOR THE WORLD
1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI

Every Filling Station

Self Closing Hydrant

Should Have a Genuine Murdock Hydrant

Because it will not freeze. It delivers water regardless of climate. At all times a convenience to the customer, preventing running in and out of stations and to yourself because it is not necessary to shut it off at night. Some of the largest distributors are using them.

ALSO DRINKING FOUNTAINS
Write for Catalogues

THE MURDOCK MFG. & SUPPLY CO.
CINCINNATI, OHIO
Makers of Outdoor Water Devices Since 1853

Heil 800 gallon, 4 compartment semi-elliptical Truck Tank mounted on 2½ ton Nash.

Heil Tanks for Your Oil Trucks

HEIL Tanks Advertise

Do your truck tanks compel attention as they pass along the street? Do they make people notice not only the truck and the tank, but most important of all, the name of your company and product?

You can carry gasoline in most any kind of tank; but only a distinctive looking compartment tank attracts attention. Just think of the wonderful advertising medium your truck tank represents.

Good-looking and well-designed truck tanks are really moving bill-boards. They deliver your products in the business, residential, and suburban districts. Thousands of people see them as they pass along the streets. Because they are custom built, Heil compartment truck tanks are distinctive in construction and design. In other words they are attention-compelling.

Let Heil tanks advertise for you.

Quality TANKS BODIES & HOISTS Made by Heil

GET a Heil electrically-welded compartment truck tank. Made in all capacities, 300 to 2500 gallons. Mount on any make or model motor truck. Complete with all Heil Quality features at a price that's right.

A standard Heil Quality truck tank consists of either an elliptical or semi-elliptical tank (electrically-welded) of desired gallonage, mounted on steel wood-filled cross members with hinged metal panel can racks: (wood board or "piping and chain" optional), can box with top hinged or side-swing doors, Heil patented Lift-Lock Bumper, piping and faucets, all assembled and painted one coat of rust-proof lead. Easily mounted on truck with "U" Bolts.

Heil 300, 400 and 500 gallon, 3 compartment truck tanks have been standardized in construction and design. They are built up in large quantities and kept in stock ready for immediate delivery. Ask about them.

THE HEIL CO.

1238-50 26th Ave. Milwaukee, Wisconsin

Manufacturers Bodies, Hoists, and Tanks for all trucks

The Heil Co.
1238-50 26th Ave.
Milwaukee, Wisconsin
Please send me your latest Tank Catalog including Bulletin 148 and special information on Fuel Oil Tanks.

Name.....

Address.....

City.....

Continental Oil Gets Well At Richfield

LOS ANGELES, April 30.—Completion this week of the Kraemer No. 1 well in the Richfield district definitely puts the Continental Oil Co. in the producing business in California.

The Kraemer well was drilled by the Continental and the Consolidated Royalty Oil Co. of Casper. It went 4511 feet deep, and is producing 200 barrels of 25 degree gravity oil per day.

The drilling was done on a 20-acre lease operated by the Wonder Oil Co. Ltd., with offices in San Francisco. Wonder has had two wells on production there for a number of years, with a third hole suspended and a fourth location never spudded in.

Kraemer No. 1 is on the west edge of the lease, in proven territory. The lease is a western boundary of the Union Oil Co., of California holdings.

The Continental Oil Co. is the largest marketing organization in the Rocky Mountain states and has within the past three years become a prominent producer. It produces oil in Montana, Wyoming, Colorado, New Mexico, Texas and Oklahoma.

The Consolidated Royalty company holds over-riding royalties on a great deal of production in the Salt Creek field of Wyoming, and has been a team-mate of the Continental in other wildcat drilling projects. The two companies are now drilling a wildcat test in Colusa county, this state.

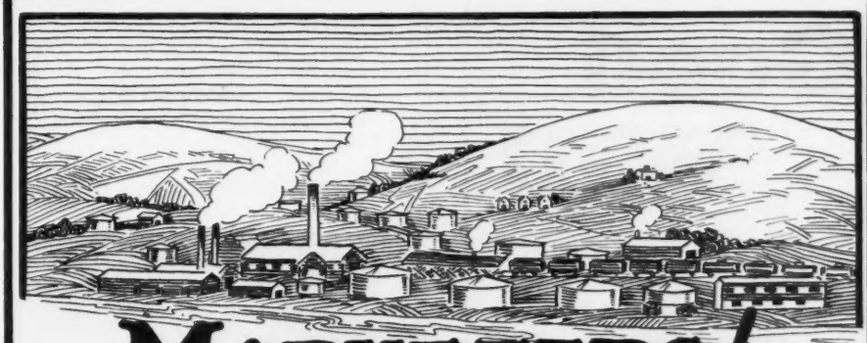
The Continental Oil Co. is engaged in the construction of an oil pipe line from the San Juan Basin fields in northwestern New Mexico to the main line of the Santa Fe railroad at Gallup, New Mexico.

Operator Recovering From Injury

IOLA, KANS.—George Gates, well known operator and driller of Iola, is recovering from an injury to his leg. A few weeks ago while supervising development work in the Madison field, a pulley from a derrick fell and caught him on the leg. A badly crushed bone necessitated amputation eight inches above the ankle, which eliminated the possibility of an attack of blood poisoning.

Mr. Gates was returned to his home here on April 9 after several weeks spent in the Newman Memorial Hospital at Emporia, Kans. Mrs. Gates who has been with Mr. Gates during his illness, accompanied him home.

OLEAN, N. Y.—Kendall Refining Co. with headquarters at Bradford, Pa., will build a filling station here, which will be operated by Bowman Griffith, who operates stations at Bradford and Seneca Junction. Products for this station will be furnished from the Olean bulk plant of E. L. Gayvert & Co., Gowanda, N. Y., who handle Kendall products.



MARKETERS!

Would you like to own a part of these rich oil fields, where nature produces, and science develops the world's finest motor oils?

EMPIRE PRODUCTS

- Motor Oils
- Gasoline
- Kerosene
- Greases
- Parafine
- Waxes
- Fuel Oils
- Stocks
- Neutral

Here is an opportunity to join in a profitable partnership without the overhead and managerial expenses.

In other words, you can obtain the finest motor oils ever produced, blended according to your own requirements or straight runs, on a basis that is as profitable as though you were part owner of Empire's highly valued oil fields. You can buy small quantities or carload lots with the same facilities and economy throughout. You are always assured of uniformly high grade petroleum products.

State your requirements and Be a Partner With

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 19

EMPIRE

EMPIRE OIL WORKS, INC.
Oil City, Pa.

WHEN YOU BUY EMPIRE YOU GET THE BEST

USED OIL EQUIPMENT

If you want to buy it—turn to the classified advertising page at the back of this issue. If what you want is not listed there, why not insert an advertisement of your own next week?

If you want to sell it—follow the same course.

There is a constant market in used oil equipment. Take advantage of the great savings possible, either by selling what you no longer need or buying what you do need.

National Petroleum News
892 Caxton Building Cleveland, Ohio

Good Will

is an important factor in any successful business. The Humble Oil & Refining Company appreciates that to hold your good will it is necessary to supply you with products, the sale of which will gain and hold the good will of your customers.

Humble Motor Oils satisfy. They are produced only from high-grade cold-test crudes and are "straight run." They are not mixed or blended. Humble Motor Oils are of a clean, beautiful amber color and have just the right body to properly lubricate all bearing surfaces, and when burned leave little carbon to foul the motor or contaminate the crankcase mixture.

Humble Oil & Refining Co.

Houston, Texas

Producers - Pipe Lines
Refiners - - Marketers

"Zero Cold-Test Oils"

HUMBLE OIL & REFINING CO.
HUMBLE OILS
HOUSTON, TEXAS

Here & There

National Petroleum News

C. R. KERR

It must have been an unusual deal—more likely an unusual story—that provoked this expansive smile by the always genial sales manager of the Sloan & Zook Co., Bradford, Pa., who was "snapped" at the recent spring meeting of the National Petroleum Association at Cambridge Springs, Pa.

John L. Twigg, Cumberland, Md., who was tank wagon driver for four years for the Indian Refining Co., Lawrenceville, Ill., and two years with the Western Maryland Oil Co., Texaco distributor, embarked on May 1, 1925, into the gasoline and oil jobbing business for himself. Mr. Twigg, who operates under the name of Queen City Oil Co., at Cumberland, has been enjoying an increase in gallonage each month.

A Fordson truck, equipped with a 300 gallon tank and one 30 gallon motor oil tank on each side, has just been added.

* * *

A. W. Horton, who has been agent at Oklahoma City for the Marland Refining Co., Ponca City, has been transferred to the southwestern division at Ponca City where he is superintendent of the division.

B. W. Fitzgerald succeeds Mr. Horton as agent at Oklahoma City.

* * *

D. E. Dieterle, who until recently was credit manager of the east central district of the Sinclair Refining Co., Chicago, has been promoted to assistant to the general agent for metropolitan Detroit.

* * *

S. F. Shaw, San Antonio, Tex., has been investigating the Garber and Smackover fields with a view of installing air and gas lifts.

L. W. Hutchins, general oil representative and chemical engineer of The Texas Co., Houston, Tex., delivered an interesting talk before the American Chemical Society at the University of Maine, Orono, Me. on Apr. 23. His subject was "Petroleum and Its Products." Special mention was made of paper mill lubrication, as Maine is the home of some of the largest paper mills in the country and several of the chemists attending were representatives of that industry.

* * *

C. A. Callison, president of People's Oil & Fuel Co., Oswego, N. Y., has returned from wintering in Florida. In view of the data collected by Mr. Callison during his stay in the south, the board of directors is considering locating winter branches in the southern territory, according to W. B. Donovan, secretary.

H. L. Callison, vice president, accompanied Mr. C. A. Callison.

* * *

Edwin H. Spuhler, of the National Refining Co., Cleveland, has been appointed a member on the board of control of the Cleveland Safety Council, to represent the petroleum section in Cuyahoga county.

The petroleum safety committee is now being organized and will soon be under way with a safety program in the county for the individual needs of the petroleum section.

* * *

W. H. Shaudt, Slater, Ia., has started in the oil marketing business for himself and is operating under the name of Home Oil Co. He has installed 37,000 gallons storage for gasoline and kerosene. He is making deliveries with three trucks, all of which are equipped with 400 gallon tanks.

* * *

A. R. Himmelrich, who has been for several years with the Baltimore, Md., district offices of the Indian Refining Co., Lawrenceville, Ill., and Edward O. Randall, who is known in oil marketing circles, have organized the Inland Oil Co. at Baltimore. The new company is jobbing a line of oils and greases.

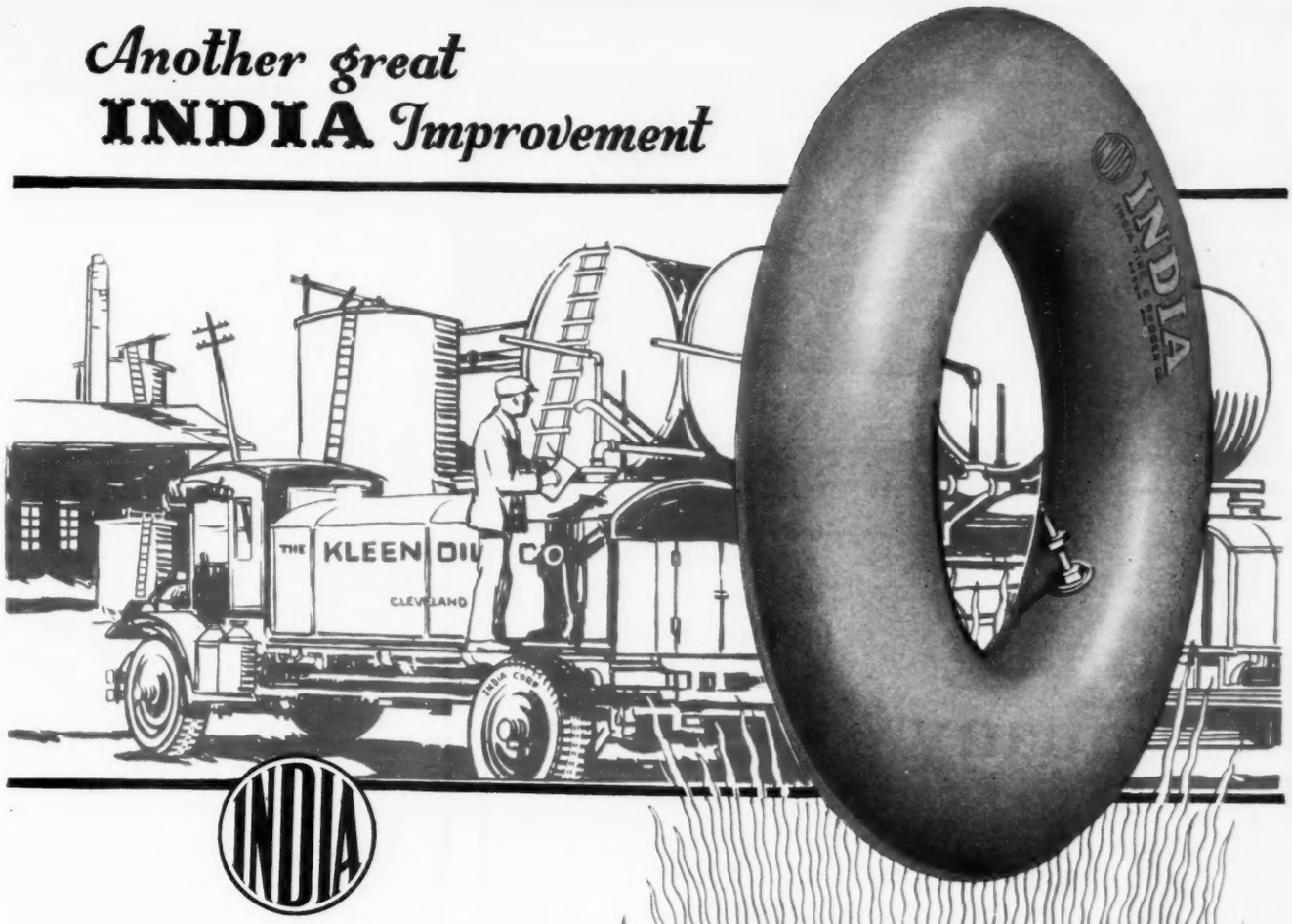
* * *

H. M. Crader, president of Crader Oil & Supply Co., Inc., Towanda, Pa., recently married Miss Barbour Berryman, of Chicago, Ill. Mr. and Mrs. Crader will spend their honeymoon abroad.

* * *

F. H. Lahee chief geologist at Dallas, Tex. for the Sun Oil Co., Philadelphia, returned on Apr. 15 from a two months' business trip to Venezuela.

Another great **INDIA** *Improvement*



Heat from high speed has ruined more tubes than have punctures and hard wear.

INDIA'S True-Blue (HEAT-PROOF) Inner Tube with the Sure-Vulc Splice is the first to successfully overcome this "burning up" of tubes under high-speed conditions.

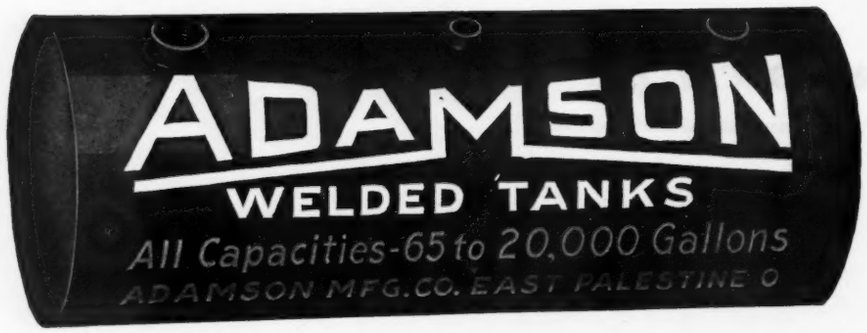
This new type of tube developed by INDIA makes INDIA tires for passenger cars or heavy service give even greater records of uninterrupted mileage.

To try INDIA Tires with True-Blue (HEAT-PROOF) Inner Tubes will give you a new idea of tire economy.

INDIA
TRUE BLUE
HEAT PROOF
INNER TUBE

Get India Wise

INDIA TIRE & RUBBER CO., AKRON, OHIO.



GULF
Refining
Company

General Sales Offices
PITTSBURGH, PA.
District Sales Offices
New York, Houston, Atlanta,
Boston, New Orleans, Tampa,
Philadelphia

REFINERS OF OKLAHOMA
TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

Industrial Notes

A NOVEL baffle wall construction known as the BECO Baffle Wall is now being manufactured, marketed, and installed by the Boiler Engineering Co., 931 Federal Trust Bldg., Newark, N. J. It does away entirely with tiling and is claimed to be better than monolithic or any other construction of baffle walls.

In this wall a simple continuous strip of corrugated metal is placed diagonally. This construction is applicable to any kind of water tube boiler. The strip of corrugated metal separates the plastic refractory material into layers. This method is already recognized by many prominent boiler experts as being the simplest and best baffle wall construction in existence, according to the company.

The principal objection to monolithic construction is that it is inflexible. If proper provision is not made for expansion and contraction, the result is the same as in monolithic sidewalks and roads—cracking is inevitable. Therefore for the same reason that joints are placed in concrete sidewalks, there should be flexible joints in boiler baffle walls. At the same time, those joints must not only be sliding joints but they must be gas tight.

The manufacturers state that their joint is ideal because it has a low coefficient of friction, consequently it does not resist expansion or contraction. There can be no cracking or breaking and perfect flexibility is always assured.

* * *

Fairbanks, Morse & Co., of Chicago, have demonstrated, they say, that by use of suitable grease the lubrication of the Fairbanks-Morse ball-bearing motor is reduced to a 20-minute job once a year.

They have introduced another improvement that further simplifies motor lubrication. It is in furnishing the proper greases in collapsible tubes, each containing just enough grease for a motor's annual requirements. After flushing out the old grease with kerosene as directed in printed instructions supplied with the tube, the new FMCO grease is squeezed from the grease tube directly into the bearing. The directions show just how much to put into each bearing for the best results. Four sizes of tubes are available for corresponding sizes of bearings.

* * *

The Gas Engineering & Construction Co., Tulsa, which is Mid-Continent representative of Clark Bros. Co., Olean, N. Y., has purchased a Waco airplane for its service department. It will also be used by William G. Cummings, president of the former company, for his various trips to the field.

Industrial Catalogues

THE OIL INDUSTRY" is the title of a recent book by Ernest R. Lilley, Sc. D., assistant professor of geology at New York University. It is a survey of the entire industry—production, refining, transportation and marketing, and gives not only specific details of the various branches but also an understanding of their place in the general scheme of the industry.

Following is the table of contents: Nature and Origin of Hydrocarbons; Organization of the Industry; Exploration; Oil Lands and Leasing—American Practice; Foreign Leases and Concessions, Drilling, Drilling in Operations; Lease Operation; Oil Fields of the U. S. and Canada; Mexican and Cuban Fields; South and Central America; Old World Fields; Transportation and Storage; Marketing of Crude Oil; Natural Gas and Gasoline; Refining; Cracking; Blending and Compounding; Marketing of Refined Oils; World Corporation Control; Competitive and Substitute Industries; Futures, Index; 43 Tables of Statistical Data and 181 Illustrations. Price $6.00.

* * *

Brown Instrument Co., Philadelphia.—Catalog No. 92 on Brown resistance thermometers and an 80-page booklet on instructions for the installation and care of thermo-electric pyrometers, have just been published.

Catalog No. 92 of 20 pages reproduces in colors the newly-designed line of thermometers and also describes the new continuous recording resistance thermometers. Advantages and features of the devices, as well as prices, are included.

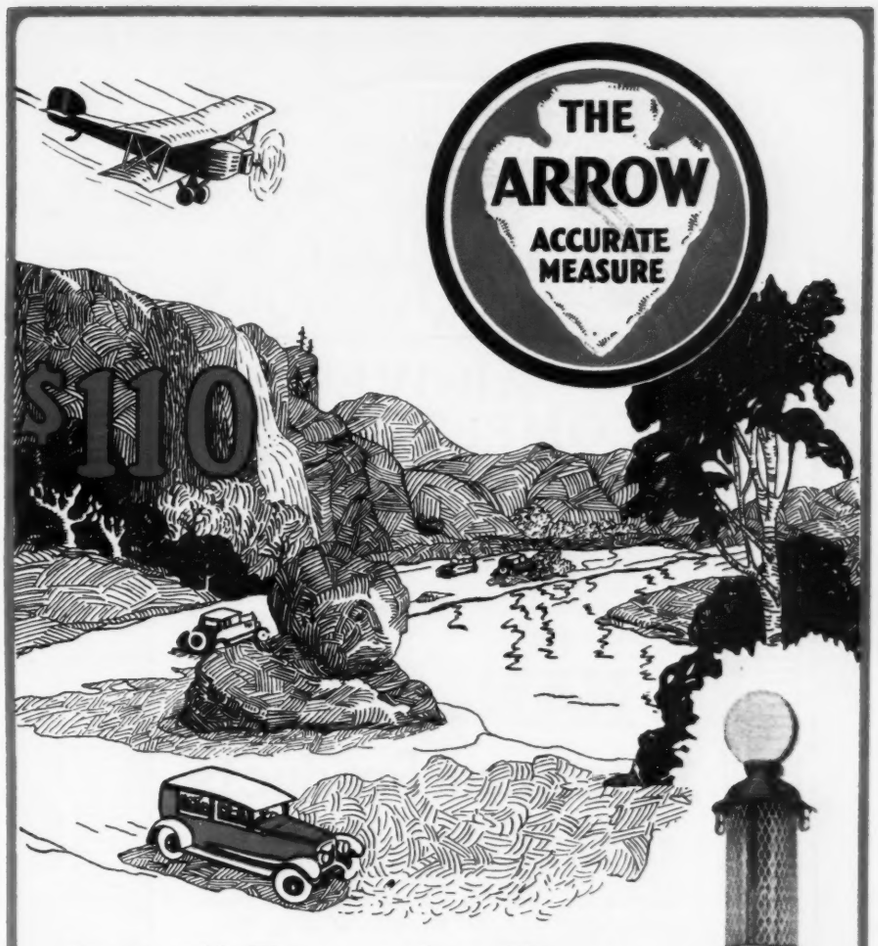
The booklet on instructions includes information on the theory of thermo-electric pyrometry; describes and illustrates indicators, and continuous recorders. It also explains the checking of pyrometer installations.

A similar booklet was published two years ago but the present edition has been revised and brought up-to-date to include the line of continuous recorders.

* * *

Quigley Furnace Specialties Co., 26 Courtlandt St., New York.—A booklet on the Quigley refractory gun for patching weak places in a furnace lining to prevent re-construction expense has been published. A repair job that formerly required hours, can be done in a few minutes with this gun, the booklet states. A plastic mixture called Hytempite is used in the gun.

CROOKSTON, MINN.—Crookston Oil Co., Inc., has purchased the Leader Oil Co. at Warren, Minn. from Roy Kailer of Bemidji, Minn. A. J. Kelley, president of the Crookston company, will act as purchasing agent for the new company.



$110.00 Buys the Best

Hand or Air Lift, ten gallon visible. Think of it—a hand lift or air operated, dependable, accurate gasoline pump for $110. Can you afford to buy any before you investigate this ARROW PUMP?

Write us for descriptive, illustrated Catalog

Wichita Pump & Equipment Company
Wichita, Kansas

COUPON BOOKS
of Every Description
for the Filling Station

We will gladly send samples and prices upon request

Allison Coupon Co.
Indianapolis **Indiana**

ABOVE
COMPETITION
Kanotex Customers make possible Kanotex Quality. Their steady patronage is reflected in reduced selling costs.
This saving makes it possible for us to offer higher Quality at existing market prices.
KANOTEX
Petroleum Products
are above competition mainly for that reason. Their higher quality has kept our old customers on our books year after year. New ones come to us constantly as they find it easier to sell Kanotex Quality, than to sell *against* it.
THE KANOTEX REFINING CO.
Phone L. D. 4, Arkansas City, Kas.
KANOTEX

New Oil Station Construction

Providence, R. I.—Durfee's Auto Supply Station is erecting a two-story brick building which will be used for sales rooms, gasoline, oils, tires and automobile accessories. Its present building will be used by a battery and vulcanizing department.

Oil storage will be in the basement. Gulf gasoline will be handled through six pumps, according to H. W. Durfee, proprietor.

* * *

Winnebago, Minn.—Independent Oil Co. is erecting two bulk stations, one at Blue Earth and the other at Bricelyn, Minn., according to George H. Andrews, manager. The company formerly operated only one bulk station.

* * *

Scobey, Mont.—The Westland Oil Co., with headquarters here, has erected bulk stations at Richey, Lane, Vida and Wolf Point, Mont., this spring, and expects to erect service stations at Richey and Wolf Point soon.

* * *

Sioux City, Ia.—George Stoneking is building filling station at Cushing, Ia., and will handle products of the Johnson Oil Co., Sioux City, reports George W. Johnson, owner of the latter company.

* * *

Amarillo, Tex.—C. B. Gulley, formerly of Casper, Wyo. is erecting a 90 by 140 foot garage here, handling products of the Texhoma Oil & Refining Co., Wichita Falls, Tex.

* * *

Beatrice, Neb.—B. D. Hotchkiss, who owns and operates the Hotchkiss Oil Station here, is building another service station at approximate cost of $10,000.

* * *

Russell, Ia.—Russell Oil Co. erecting filling station here, which will be operated by W. J. Phippen, one of the stockholders.

* * *

Sheldon, Ia.—C. Van Dam is erecting service station here and will handle Red Crown gasoline and Polarine oils.

* * *

Bozeman, Mont.—Hugh Stallings is building service station here, and will handle Texaco products.

* * *

Pratt, Kan.—Standard Oil Co. of Indiana to build filling station.

* * *

Greensboro, N. C.—Gulf Refining Co. will build filling station here.

* * *

Sidney, Neb.—The Texas Co. will build filling station here.

* * *

Kingsville, Tex.—E. M. Watkins to build filling station.

* * *

Edgar, Neb.—L. E. Hunter erecting service station.

Oil Patents Issued Recently

Production

Gas and Oil Separator.—Edwin C. Weisgerber, Long Beach, Cal. Filed Feb. 4, 1925. No. 1,581,371.

Heaving Plug for Well Casings.—Jesse Louis Hawkins, Bakersfield, Cal. Filed Jan. 20, 1925. No. 1,581,442.

Rope Socket.—Alton F. Yeaton and Lewis W. Breyfogle, Akron, Ohio, assignors to The Star Drilling Machine Co., Akron, Ohio. Filed Jan. 2, 1925. No. 1,581,561.

Casing Elevator.—Lewis E. Zerbe, Moneta, Cal., assignor to Union Tool Co., Torrance, Cal. Filed Mar. 20, 1922. No. 1,581,775.

Deep-Well Pump.—Arthur C. Tunison, Los Angeles, Cal. Filed Apr. 9, 1924. No. 1,581,890.

Oil-Well Fishing Tool.—John A. Kinch, Taft, Cal. Filed Oct. 22, 1925. No. 1,581,-959.

Oil-Well Pump.—Patrick G. McKeon, Harold A. Moles, and John J. Varner, Tulsa, Okla. Filed Feb. 28, 1925. No. 1,-580,212.

Drill.—Lawrence Dudley Karns, Salt Lake City, Utah, assignor to Lawrence Well Drill Co. Filed Sept. 26, 1921. No. 1,580,254.

Bit Die.—John P. Karns, Chicago, Ill., assignor to Lawrence Well Drill Co. Filed Mar. 29, 1922. No. 1,580,255.

Expansion Joint.—LeRoy H. Perry, Gardena, Cal., assignor to Spengler Fishing Tool Co., Los Angeles, Cal. Filed May 5, 1925. No. 1,580,325.

Well-Fishing Tool.—Ercole Ventresca, Houston, Tex. Filed July 6, 1925. No. 1,580,352.

Pump Valve.—James J. Brett, Huntington Beach, Cal., assignor of one-half to George S. Fosnaugh, Huntington Beach. Filed Nov. 15, 1923. No. 1,580,402.

Process of Dehydrating Oil.—Harold C. Eddy, Los Angeles, Cal., assignor to Petroleum Rectifying Co. of California. Filed Aug. 26, 1924. No. 1,580,591.

Drill Bit.—George R. Watson, Waterloo, Iowa, assignor to Armstrong Mfg. Co., Waterloo. Filed Jan. 2, 1924. No. 1,580,872.

Fishing Tool.—William H. Murray, Shreveport, La., assignor of one-half to Superior Iron Works, Inc., Shreveport, La. Filed Dec. 3, 1924. No. 1,581,010.

Refining

Recovering Gasoline.—Fred E. Hosmer, Fort Worth, Tex. Filed May 14, 1920. No. 1,581,212.

Method of Refining Lubricating Oil Stocks.—James W. Weir, Fillmore, Cal. Filed May 14, 1925. No. 1,581,369.

Process of Manufacturing Lubricating Oils.—James W. Weir, Fillmore, Cal. Filed Nov. 9, 1925. No. 1,581,370.

Method and Apparatus for the Extraction of Coke from Vertical Retorts.—Arthur McDougall Duckham, London, England, assignor to IsBell-Porter Co., Newark, N. J. Filed Nov. 7, 1924. No. 1,581,724.

Bolted Steel Tube Still for Distilling Oil.—James M. Sims and Olpha M. Brooks, Shreveport, La. Filed Oct. 24, 1924. No. 1,581,879.

Apparatus for Cracking Hydrocarbons.—Frank E. Wellman, Kansas City, Kans., assignor to The Kansas City Gasoline Co., Kansas City, Kans. Filed Apr. 21, 1920. No. 1,581,895.

Method of Heating Oil.—Frank E. Wellman, Kansas City, Kans., assignor to The Kansas City Gasoline Co., Kansas City, Kans. Filed Dec. 15, 1921. No. 1,581,896.

Miscellaneous

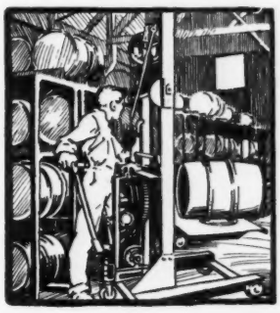
Process of Preventing the Persistence of Chain Formations in an Electrical Dehydrator for Oil Emulsions.—Ford W. Harris, Los Angeles, Cal., assignor to Petroleum Rectifying Co. of California, Los Angeles. Filed Feb. 11, 1925. No. 1,581,-205.

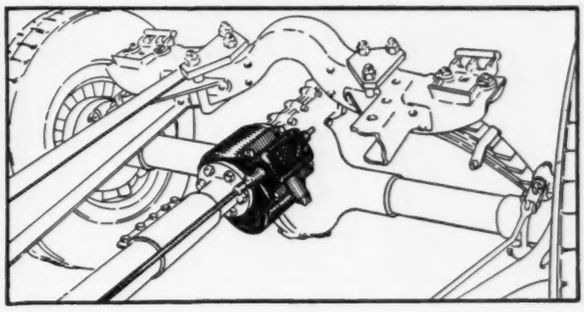
Pipe-Cleaning Machine.—Walter J. Garner, Lone Star, Petrolia, Tex. Filed June 22, 1923. No. 1,581,400.

Lubricant.—Jess D. Kimmel and Ralph J. McMahon, Dayton, Ohio. Filed Aug-8, 1923. No. 1,581,804.

THEY MAKE YOUR EQUIPMENT DO MORE WORK

THE BARREL STACKING MACHINE & **THE FULLER** *AUXILIARY TRANSMISSION* FOR FORD TRUCKS





The barrel stacking machine really earns you dividends because it eliminates much labor and enables you to use all the storage capacity of your warehouse.

The FULLER Auxiliary Transmission likewise really earns you dividends. This unit enables you to use all the carrying capacity of your Ford Trucks, *without overstraining them.*

Installed just ahead of the differential, the FULLER receives the power delivered by the motor, transmission, and drive shaft, and, when in double low, passes it to the wheels, increased in pulling ability by 80 per cent.

Thus the bulk of the pulling strain is carried only by the rear axle, which is heavily overcapacity. The work of all the other driving mechanism is actually lightened.

The FULLER will pay you dividends by helping your trucks carry more, and bigger loads, by cutting your repair bills, and by lengthening the life of each truck. No auxiliary brakes are needed with the FULLER, and its cost is only $60.00, a price made possible only by its ingeniously simple design. Its quality is very high.

Ask your Ford Dealer for particulars.

PRICE $60.00 F. O. B. FACTORY

$5.00 Additional West of the Rockies

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KALAMAZOO MICHIGAN

TRANSMISSION BUILDERS FOR 23 YEARS

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

NATIONAL PETROLEUM NEWS

807 Caxton Bldg., Cleveland, Ohio

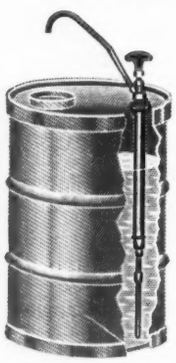
ATTWOOD
Portable
OIL and GREASE EQUIPMENT

Valveless Grease Cabinet

Handles all greases light or heavy. Has no valves—nothing to get out of order. The best made grease cabinet on the market. Capacity 20 lb. Delivers exactly ¼ lb. to a stroke. LIST PRICE $12.50.

For Medium Greases

Attwood No. 2 for medium oil and grease has same capacity as "valveless" machine. A sturdy well made grease cabinet at an attractive price. LIST PRICE $10.00.



Attwood Barrel Pump

This pump is made of highest grade material. Has telescopic base permitting adjustment to any size barrel up to 34". Handles any liquid and delivers approximately 1 pint to every stroke. Every user of oil needs this pump. Does away with leaky wasteful faucets and ensuing drips. Saves floor space. Cleaner. LIST PRICE $5.00.

"Speed" Pump

For transferring heavy lubricants from cans to gear cases, etc. Fast operating. Pumps ¼ lb. on both up and down stroke. Made from seamless steel tube with heavy adjustable base. Comes complete with 40" hi pressure grease hose. LIST PRICE $5.00.

Write for discounts!

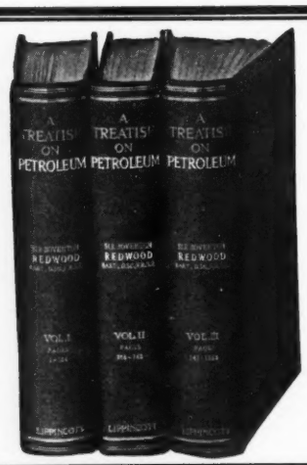
ATTWOOD BRASS WORKS
Grand Rapids, Michigan

Sell Keen & Woolf Lubricating Oils

Because

It's only necessary to
Sell Them
ONCE

KEEN & WOOLF OIL CO.
Refiners for Jobbers *Houston, Texas*



Information on all branches of the petroleum industry is to be found in the 4th edition of A TREATISE ON PETROLEUM by Sir Boverton Redwood.

To obtain this valuable set make your check for $39 payable to

NATIONAL PETROLEUM NEWS
811 Caxton Bldg. Cleveland, Ohio

ON THE LAZY BENCH

National Petroleum News

Oil Country Dictionary

President: High salaried man with great vision. Takes good picture in oil togs.

Treasurer: In charge of funds—if any.

Promotor: Living proof that the pen is mightier than the sword.

Driller: The man that lies to the Oil Scout and pebble pup.

Tool Pusher: The guy who locates the "corn."

Superintendent: The guy that takes credit if oil is found.

Rock Hound: Endearing term for Geologist.

Geologist: Individual with wise look and a perfect alibi.

Assets: One desk, bob-haired steno and good strong letter from a banker.

Liabilities: "This matter has been referred to our auditing dept., and you will no doubt hear from them sometime."

Dividend: Often heard of, never seen. Something to look forward to.

Structure: The exact location of every wildcat well ever drilled.

Potential Possibilities: "Thousands, millions—perhaps billions—who knows."

Dry Territory: There ain't no such place.

Rainbow on the Pit: Kerosene poured out of handy can—Toolie's stock joke.

"Who Knows": Oil man's famous camouflage.

—The Bridgeport Driller

◈ ◈ ◈

Crude Oil

Slim was down to Tulsa last week and says they have a new brand of cocktails down there. You drink one of them with your sweetie and have your wife for a chaser.

Must be like the synthetic gin Red bought in Wichita last week: "Makes a fellow see double and feel single."

—The Bridgeport Driller

◈ ◈ ◈

How It Happened

She—"How did they ever come to marry?"

He—"Oh, it's the same old story. Started out to be good friends, you know, and later on changed their minds."

—Beacon Flash

◈ ◈ ◈

Sagacity Prevails

Piqua drivers are thinking of forming a gun club, but at a recent practice shoot, they decided to pitch horseshoes, instead.

—Flash and Fire

◈ ◈ ◈

Speaking of Dumb-Bells

My girl's so dumb she thinks a tonsorial parlor is a throat doctor's office.

—Independent Topics

No, He Has a Job

An Italian, having applied for American citizenship, was being examined in the naturalization court.

"Who is President of the United States?"

"Mr. Coolidge."

"Who is Vice-President?"

"Mr. Daw."

"Could you be President?"

"No."

"Why?"

"Mister, you 'scuse me, please; I vera busy worka da mine."

Union Oil Bulletin

◈ ◈ ◈

Ikey and Izzy were separating when Ikey said: "Au revoir." "Vat's dat?" asked Izzy. "Dat's good-by in French." Vell," said Izzy, "Carbolic acid." "Vat's dat? asking Ikey. "Dat's good-by in any lengvidge."

—Gasoline

◈ ◈ ◈

Then it Happened

"Miss Gloria, if I should kiss you would you call for your father?"

"Yes, but he's not at home."

—Beacon Flash

◈ ◈ ◈

"My husband has bought me a beautiful automobile."

"Can you drive?"

"Well, I drove him into buying that."

—Beacon Flash

◈ ◈ ◈

Norman Jorgenson, our Hanlontown tank-wagon man, came into Mason City to visit a friend at the hospital. A pretty nurse met him at the door and informed him: "I'm sorry, but you can't see him. He's convalescing."

To which Norman replied: "I'll wait."

—Mason City Gas Gossip

◈ ◈ ◈

With graceful feet, a maiden sweet
Was tripping the light fantastic,
When she suddenly tore
For the dressing room door—
You never can trust elastic.

—Mason City Gas Gossip

◈ ◈ ◈

By the Professor

"Well, my dear young lady, if you are interested I shall be only too glad to show you my bacilli."

"Oh, professor, how ripping! And may I come at their feeding time?"

—Beacon Flash

◈ ◈ ◈

Lady: "You say your father was injured in an explosion. How did it happen?"

Child: "Well, mother says it was too much yeast, but father says it was too much sugar."

Union Oil Bulletin

PETROLEUM
and its Products

WRITE OR WIRE
FOR QUOTATIONS

Marietta, Ohio Refinery
operated on Pennsylvania Crude

Findlay, Ohio Refinery
operated on Ohio Crude

Coffeyville, Kansas Refinery
operated on Midcontinent Crude

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NATIONAL REFINING Co.
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CLEVELAND OHIO

3 MODERN REFINERIES
COFFEYVILLE, KAN.-FINDLAY, O.
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2-PIECE CASES

393 Folio and inner Case, Net $14.85

Made from heavy black cowhide with stiffened bottom, reinforced with metal studs. Extension lock and strong, comfortable handle. There are 3 roomy pockets for stationery and Inner Case, which has a handle and may be carried separately. It is velvet lined with compartment containing 9 four oz. bottles and 4 one half oz. jars. Your name embossed in gold *free.* Satisfaction guaranteed or your money returned.

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Builders of Sales Luggage
614 Delaware KANSAS CITY, MO.

1916
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TEN YEARS!

of manufacturing
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of Quality

SINCLAIR OILS
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ATLANTA DETROIT KANSAS CITY CHICAGO HOUSTON OMAHA

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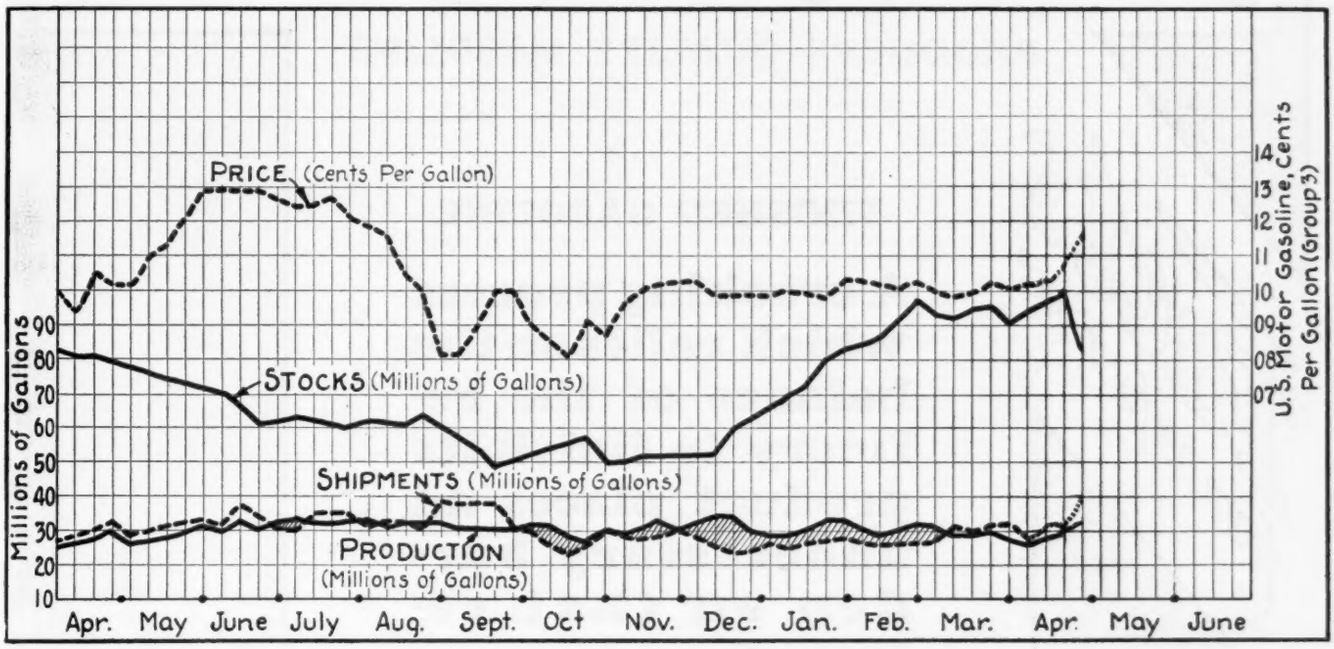
Refinery - Tank Wagon Markets

National Petroleum News

Barometer of the Mid-Continent Gasoline Market Week Ended April 30


PRICE (Cents Per Gallon)
STOCKS (Millions of Gallons)
SHIPMENTS (Millions of Gallons)
PRODUCTION (Millions of Gallons)
Millions of Gallons
U.S. Motor Gasoline, Cents Per Gallon (Group 3)
10 20 30 40 50 60 70 80 90
07 08 09 10 11 12 13 14
Apr. May June July Aug. Sept. Oct Nov. Dec. Jan. Feb. Mar. Apr. May June

Tank Wagon Advances Aid Refinery Market

Staff Special
TULSA, May 1

AN exceptionally strong gasoline market, developed on active buying and well supported in the middle and on all sides by tank wagon advances, was the May day greeting in the Mid-Continent.

After moving steadily forward under the stimulus of increased demand until 58-60 U. S. Motor gasoline had advanced almost a cent since April 15, the market received its first tank wagon support Wednesday when the Standard Oil Co. of Indiana announced that, the following day gasoline would be advanced 1 cent Other major companies immediately followed, and by the end of the week only one or two had failed to make upward revisions.

Refiners probably derived more pleasure from these advances than any other group in the industry. They felt that the crude advance on Feb. 1 was premature, and caused an increase in tank wagon gasoline at a time when the demand was not sufficient for refiners to absorb any part of the increase, conditions are different with this last tank wagon advance, however.

The weather always controls the April markets. This year the weather was exceptionally good, however, giving refiners an opportunity to ship heavily and thereby prevent an accumulation of stocks. By April 23 inquiries were piling up, and considerable buying was being done for shipment over the first part of May. A majority of the refiners refused to commit themselves for the entire month.

The first advance caused buyers to get out of the market, but this was to be expected. As soon as the market settled, however, active buying is expected to be resumed.

Refiners must be given due credit for the present condition of the market, because of their determination to hold down crude charges through stills. A comparison of weekly operation reports from Mid-Continent refiners to this publication for March and April, 1925, and the same months this year, reveals that crude runs the past two months were consistently below those of a year ago, with substantially the same group of refiners reporting both years.

This curtailment of crude runs has kept stocks from becoming burdensome before the spring and summer demand causes refiners to begin drawing heavily on storage.

The crude market, however, is being closely watched by refiners. This market is considered steady to strong at present. Production has been slowly dropping off, especially in the Oklahoma territory. If refiners increase their crude charges through stills rapidly within the next 30 or 45 days, and no new fields or increased production appear to indicate a greater crude production for this summer, it is entirely probable a new flurry of premium paying will develop, with a resultant increase in crude prices, one close student of the crude situation declared Saturday.

Naphthas Are Scarce

THE demand for naphthas has increased considerably the past few days, and, since only a few refiners have been producing this material consistently through the winter months, the demand has almost outstripped the supply.

Other low gravity gasolines also are more in demand, and it is probable a larger number of refiners will begin swinging over to these cuts the next two or three weeks. During the winter only a small number in Oklahoma had low gravities to offer.

U. S. Motor gasoline shipments, as stated above, have been heavy the past four weeks. Just how much of this

(Continued on page 149)

JENKINS CRACKING PROCESS

PRODUCES QUALITY GASOLINE

Facts from performance

FINISHED GASOLINE

A cracking process which relies on the balance of the refinery to finish its product places an unnecessary burden on that refinery.

The Jenkins Cracking Process produces High Quality gasoline — finished except for the doctor treatment.

GRAVER Corporation Founded 1857

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

GASOLINE AND NAPHTHA

	Prices May 3	Prices April 26	Prices April 19
PENNSYLVANIA			
52-54 Naphtha	12¾-13	12 -12¼	12 -12¼
54-56 Naphtha	13¼-13½	12½-13	12¾-12½
58-60 Gasoline	13¾-14	-13	12¾-13
60-62 Straight-run gasoline	-14½	13¾-14	-13½
64-66 Straight-run gasoline	15 -15¼	14¾-15	14½-15
68-70 Straight-run gas. 350-360 E.P.	-16	15¼-15¾	15½-16
68-70 Straight-run gas. 305-320 E.P.	-20	-20	-20
OKLAHOMA			
48-50 450 E. P. naphtha	-10¾	- 9½	- 9¼
50-52 450 E. P. naphtha	10¾-10⅞	9½- 9¾	9¾- 9½
56-58 450 E. P. gasoline	-11	10 -10¼	- 9¾
56-58 U. S. Motor gasoline	11 -11¼	10¾-10¾	-10
58-60 450 E. P. gasoline	11 -11¼	10 -10¼	-10
58-60 U. S. Motor 437 E. P.	-11½	-10½	-10¼
60-62 400 E. P. gasoline	12¼-12⅜	-11½	11¼-11¼
64-66 390 E. P. gasoline	12½-12⅝	-12	11⅜-11¾
64-66 375 E. P. gasoline	12⅝-13	12¼-12¾	-12¼
68-70 350-360 E. P. gasoline	13¼-13½	12¾-13	12¾-13
64-66 437 E. P. blend	-11	9⅞-10⅛	9¾- 9⅞
KANSAS*			
58-60 U. S. Motor gasoline	-11¾	-10¾	-10½
60-62 400 E. P. gasoline	12½-12¾	11½-11¾	11¾-11½
64-66 375 E. P. gasoline	13½-13¾	12½-12¾	12½-12¾
*F. O. B. refinery Kansas destination.			
NORTH TEXAS			
48-50 450 E. P. naphtha	10½-10¾	- 9¼	- 9¼
56-58 450 E. P. gasoline	-11	9¾-10	9¾- 9¾
58-60 450 E. P. gasoline	11 -11⅛	10 -10⅜	9¾-10
56-58 U. S. Motor gasoline	-11⅛	10 -10⅛	9¾-10
58-60 U. S. Motor gasoline	11¼-11½	10⅜-10⅜	10 -10¼
64-66 390 E. P. gasoline	12½-12¾	12 -12⅛	11⅞-12
64-66 375 E. P. gasoline	12¾-13	12¼-12⅜	12¼-12⅜
68-70 350-360 E. P. gasoline	13¼-13½	-12¾	-12¾
NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	11¼-11½	10⅜-10¾	10⅜-10⅜
ARKANSAS			
58-60 450 E. P. gasoline	-11¾	-10½	-10¼
58-60 U. S. Motor gasoline	12 -12¼	10¾-11	-10¾
64-66 375 E. P. gasoline	13½-13¾	-12¾	12¼-12½
CALIFORNIA			
54-56 U. S. Motor gasoline	12½-13	12½-13	12½-13
42-45 Engine distillate, 445-480 E.P.	10 -10½	10 -10½	10½-11

Note: This is without the 2-cent state tax included in the price of California refiners for shipments within the state.

NEW ENGLAND (F. O. B. Boston and Fall River)			
U. S. Motor gasoline	-14⅜	-13½	-13½

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F.)

OKLAHOMA			
Grade Double A	10¾-11	9 - 9¼	- 9
Grade A	10¾-11	9 - 9¼	- 9
Grade Double B	-10	- 8¼	- 8
Grade B	-10	- 8¼	- 8
Grade C	9¾-10	8 - 8¼	7¾- 8

NOTE—Specifications adopted by Ass'n. of Nat. Gaso. Manufacturers
Grade Double A—80-87.9 gravity, 90% recovery, not over 375 E. P.
Grade A—72-79.9 gravity, 90% recovery, not over 375 E. P.
Grade Double B—84-92 gravity, 85% recovery, not over 375 E. P.
Grade B—76-83.9 gravity, 85% recovery, not over 375 E. P.
Grade C—80-90 gravity, 78% recovery, not over 375 E. P.

NORTH LOUISIANA			
*Grade Double A	11 -11¼	9½- 9¾	9½- 9¾
*Grade Double B	10½-10¾	8⅝- 8¾	8¾- 9
*Grade C	10 -10¼	- 8¾	8½- 8¾
*F. O. B. Monroe District.			
NORTH TEXAS			
*Grade Double A	10¾-11	- 9	- 9
*Grade A	10¾-11	- 9	- 9
*Grade Double B	-10	- 8¼	- 8¼
*Grade B	-10	- 8¼	- 8¼
*Grade C	9¾-10	8⅛- 8¼	7¾- 8
*F. O. B. Breckenridge.			
CALIFORNIA			
78-84° 375 E. P.	15½-16	16 -16½	17 -17½
PENNSYLVANIA			
68-70 Grav. 437 E. P.	14 -14¼	12½-13	12¾-13
64-66 Grav. 437 E. P.	14 -14¼	12¼-13	12¾-13
60-62 Grav. 437 E. P.	14 -14¼	12½-13	12¾-13
68-70 Grav. 420 E. P.	14¼-14½	13¼-13¾	13½-14

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosene	-10½	- 9½	- 9
46 Water White Kerosene	-11	- 9¾	- 9¼
47 Water White Kerosene	-11½	10 -10¾	9¾-10
300 Burning Oil	8½- 9	8 - 8½	8 - 8½
OKLAHOMA			
41-43 Water White Kerosene	9 - 9¼	- 8	7¼- 7¾
42-44 Water White Kerosene	9½- 9¾	8¼- 8½	- 7¾
KANSAS			
41-43 w. w. kerosene	9¾- 9½	8½- 8¾	7¾- 8¼
42-44 w. w. kerosene	- 9¾	- 9	- 8½
NORTH TEXAS			
41-43 Water White Kerosene	9 -9¼	7¾- 8	7 - 7¼
NORTH LOUISIANA			
41-43 Water White Kerosene	9 - 9½	7¾- 8¼	7 - 7¼
ARKANSAS			
41-43 Water White Kerosene	9¼- 9½	- 8½	- 7½
CALIFORNIA			
38-40 Water White Kerosene	7½- 8½	8 - 8½	8 - 8½
NEW ENGLAND			
*40-43 Water White Kerosene	-10¼	-9½	.....

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)			
200 Vis. No. 3 Assoc. Filt	27½-28	27½-28	27½-28
180 Vis. No. 3 Assoc. Filt	25½-26	-25½	25½-26
150 Vis. No. 3 Assoc. Filt	21½-22	21½-22	21½-22
(Non-Viscous)			
34 Grav. 350-360 Flash	8 - 8½	8 - 8½	8 - 8½
36 Miners Neutrals 300-305 Flash	7¼- 7¾	7¼- 7¾	7¼- 7¾
OKLAHOMA (Viscosity at 100° F.)			
100 Vis. No. 2 color	6½- 7½	6½- 7½	6½- 7½
150 Vis. No. 3 color	9½-11	9½-11	9½-11
150 Vis. No. 4 color	9½- 9¾	9½- 9¾	9½- 9¾
180 Vis. No. 3 color	10¼-10½	10¼-10½	10¼-10½
180 Vis. No. 4 color	10 -10½	10 -10½	10 -10½
180 Vis. No. 5 color	-10¾	-10¾	-10¾
200 Vis. No. 3 color	-11½	-11¾	-11¾
200 Vis. No. 4 color	11¼-11½	11¼-11¾	11¼-11¾
200 Vis. No. 5 color	9½-11¼	9½-11¼	9½-11¼
220 Vis. No. 3 color	12 -13	12 -13	12 -13
220 Vis. No. 4 color	13 -13¼	13 -13¼	13 -13¼
220 Vis. No. 5 color	-12¾	-12¾	-12¾
240 Vis. No. 3 color	14 -16	14 -16	14 -16
240 Vis. No. 4 color	14¼-14½	14¼-14½	14¼-14½
240 Vis. No. 5 color	-14	-14	-14
280 Vis. No. 3 color	16 -17	16 -17	16 -17
280 Vis. No. 4 color	16¼-16½	16¼-16½	16¼-16½
280 Vis. No. 5 color	15¾-16	15¾-16	15¾-16
300 Vis. No. 5-6 color	17 -18½	17 -18½	17 -18½
GULF COASTAL (Viscosity at 100° F; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	7½- 8	7½- 8	7½- 8
200 Vis. No. 3 Color Unfilt. Pale	11½-12	11½-12	11½-12
300 Vis. No. 3 Color Unfilt. Pale	13 -13½	13 -13½	13 -13½
500 Vis. No. 3½ Color Unfilt. Pale	15 -15½	15 -15½	15 -15½
750 Vis. No. 4 Color Unfilt. Pale	19 -20	18½-19½	18½-19½
200 Vis. No. 5½ Color Red Oil	9½-10	9½-10	9½-10
300 Vis. No. 5½ Color Red Oil	11½-12	11½-12	11½-12
500 Vis. No. 6 Color Red Oil	13 -13¼	13 -13½	13 -13¼
750 Vis. No. 6 Color Red Oil	17 -18	17 -18	17 -18
CALIFORNIA (Viscosity at 100° F.)			
100 Vis. No. 2 color	11 -11½	11 -11½	11 -11½
100 Vis. No. 3 color	8½- 9	8½- 9	8½- 9
200 Vis. No. 3 color	13½-14	13½-14	13½-14
300 Vis. No. 3 color	15 -15½	15 -15½	15 -15½
450 Vis. No. 3½ color	18 -18½	18 -18½	18 -18½
550 Vis. No. 3 color	20 -21	20 -21	20 -21
600 Vis. No. 3½ color	21 -22	21 -22	21 -22
100 Vis. No. 5 color	7 - 7½	7 - 7½	7 - 7½
200 Vis. No. 5 color	12 -12½	12 -12½	12 -12½
300 Vis. No. 5 color	13 -13½	13 -13½	13 -13½
400 Vis. No. 5 color	15 -16	15 -16	15 -16
500 Vis. No. 5 color	16 -17	16 -17	16 -17
600 Vis. No. 6 color	17 -18	17 -18	17 -18
700 Vis. No. 7 color	18 -19	18 -19	18 -19

CYLINDER STOCKS

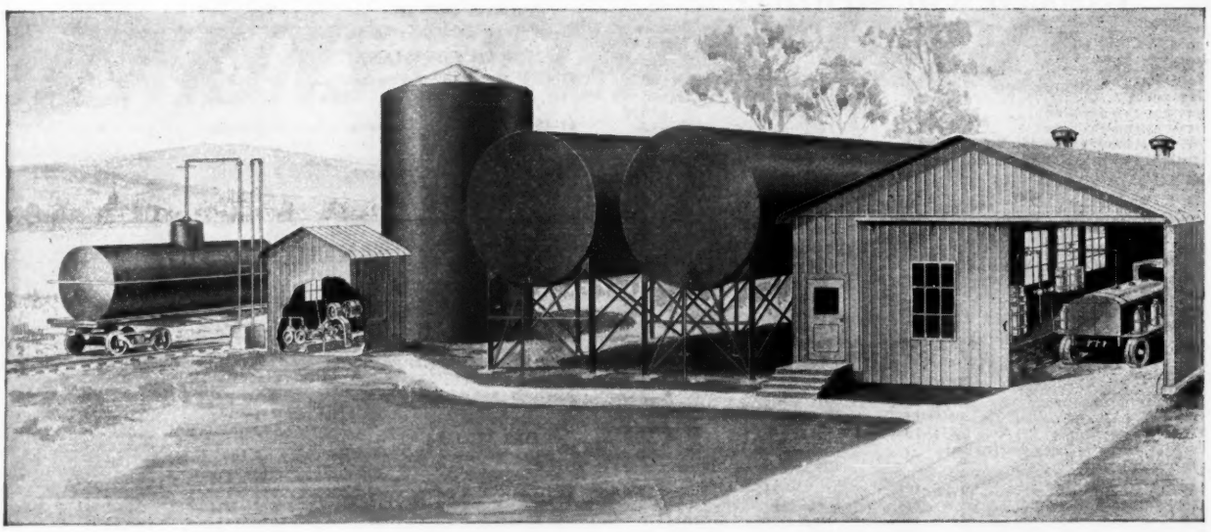
OKLAHOMA			
190-200 Vis. at 210° Bright Stock	31 -35	31 -35	31 -35
150-160 Vis. at 210° Bright Stock	27 -31	27 -31	27 -31
600 E Stock. 140-150 Vis. — 210°	18 -20	18 -20	18 -20
600 Steam Refined Olive Green	8½-11	8½-11	8½-11
600 Steam Refined Dark Green	6½- 7	6½- 7	6½- 7
Black Oil	5 - 6	5 - 6	5 - 6
PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	14½-15½	14¾-16	15½-16½
650 Steam Refined	21 -21½	21 -21½	21 -21½
600 Flash	24 -25½	24 -25	25½-26
625 Flash Steam Refined	-34	-34	34½-35
600 Warren E	-21	21 -21½	21 -21¼
600 Oil City E	-20	20 -20½	20 -20½
600 Filtered D	25 -26	25 -26	26 -27
Cold Test Stocks (bright filtered)	38½-39	38½-39	38 -39
Cold Test Stock (dark filtered)	36 -37	36 -37	36 -37

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

*Only one refiner quoting.

HSH



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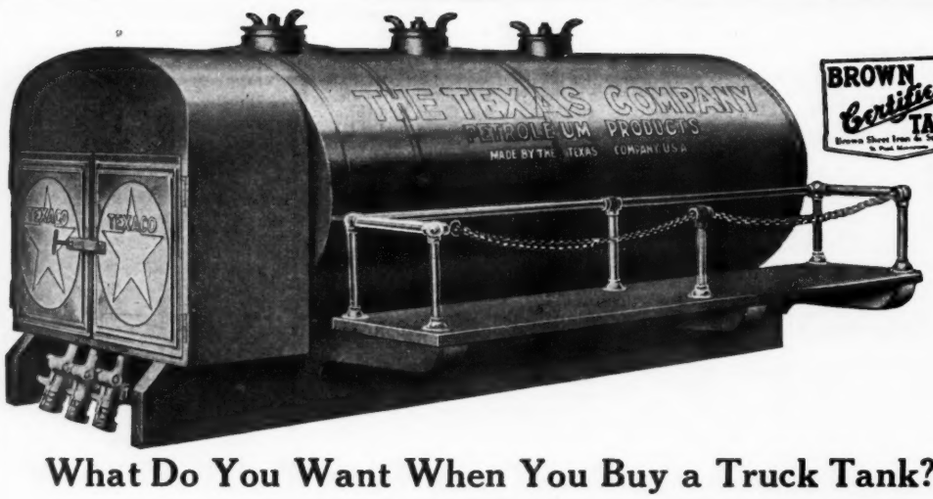
Pumps	Truck Tanks	Blue Prints Furnished
Portable Steel Buildings	Vent Valves	We will erect if desired
Tanks	Faucets	Get our prices—
Valves	Compressors	Every article guaranteed

HYDE-SCHNEIDER-HALEY MFG. CO., Rockford, Ill., *Chicago Office: 805 Transportation Bldg.*



BROWN Certified TANK
Brown Sheet Iron & Steel Co.
St. Paul, Minnesota

MORE GALLONAGE,

LESS SPACE

Brown Makes All Shapes

What Do You Want When You Buy a Truck Tank?

Absolute Tightness, Rugged Construction, Long Life, Appearance, a Perfect Fit on your Chassis and No Repair Bills.

We give All of these and more. ***At Prices Within Reason.***

BROWN SHEET IRON & STEEL CO. **ST. PAUL, MINN.**

— — — — — — — *Tear out this page and mail it today* — — — — — — —

We are interested in your tanks. Send your catalog and prices.

Make of Truck..... Year..... We operate..... (number) Tank Trucks.

Other equipment on which you may send prices.....

Name..... Address.....

Refinery Markets on Wax and Heavy Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

WAX

PENNSYLVANIA	Prices May 3	Prices April 26	Prices April 19
	(Per Pound, New York)		
122-124 White Crude Scale..	5 - 5⅛	- 5¼	- 5¼
124-126 White Crude Scale..	5⅛- 5¼	- 5⅜	- 5⅜
OKLAHOMA			
	(Per Pound, Group 3)		
124-126 White Crude Scale..	- 5	- 5	- 5
CALIFORNIA			
White Crude Scale.....	5¼- 6	5¼- 6	5¼- 6

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	6¼- 7	6¼- 7	- 6½
30-34 Fuel Oil.....	- 6½	6 - 6½	6 - 6¼
28-30 Fuel Oil.....	- 6	6 - 6¼	6 - 6¼
OKLAHOMA			
38-40 Straw distillate.....	4⅝- 4¾	4⅝- 4⅞	4⅝- 4⅝
36-38 Straw distillate.....	4⅜- 4½	4⅜- 4½	4¼- 4⅜
32-36 Gas oil (Gal.).....	4⅜- 4¼	4⅜- 4¼	4⅜- 4¼
26-30 Fuel oil (Bbl.).....1.50	-1.55	1.50 -1.55	1.50 -1.60
24-26 Fuel Oil (Bbl.).....1.37½	-1.42½	1.37½-1.42½	1.40 -1.45
22-26 Fuel Oil (Bbl.).....1.30	-1.35	1.30 -1.35	1.32½-1.35
18-22 Fuel Oil (Bbl.).....	-1.30	-1.30	-1.30
KANSAS*			
38-40 Light straw distillate..	- 4¾	4¾- 5	- 5
36-38 Light straw distillate..	- 4½	4½- 4¾	4½- 4¾
32-36 Gas Oil.....	- 4⅜	4⅜- 4½	4½- 4⅝
18-22 Fuel Oil.....1.35	-1.40	1.35 -1.40	1.35 -1.40
24-26 Fuel Oil.....1.45	-1.55	1.45 -1.50	1.45 -1.55
*F. O. B. refinery, Kansas destination.			
NORTH TEXAS			
38-40 Straw Distillate.....	4¼- 4⅜	- 4½	- 4½
32-36 Gas Oil (Gal.).....	- 4	4 - 4¼	4⅛- 4¼
24-26 Fuel per (Bbl.).....1.37½	-1.40	1.40-1.45	1.45 -1.50

GULF COASTAL	Prices May 3	Prices April 26	Prices April 19
Fuel.....1.55	-1.65	1.55 -1.65	1.55 -1.65
Gas Oil.....	- 5¼	- 5¼	- 5¼
NORTH LOUISIANA			
32-36 Light Gas Oil (Gal.)... 4	- 4½	4¼- 4½	4¼- 4½
16-20 Fuel Oil (Bbl.).....1.20	-1.25	-1.20	-1.20
ARKANSAS			
32-36 Gas Oil.....	- 4½	- 4½	4¼- 4½
Smackover Crude Fuel.....1.10	-1.17½	1.10 -1.12½	1.07½-1.12½
Road oil.....	-1.26	-1.26	-1.26
CALIFORNIA*			
14-18 Fuel Oil (Bbl.).....	1.00	1.00	1.00
14-18 Bunker Oil (Bbl.).....	1.00	1.00	1.00
24-30 Gas Oil (Bbl.).....	1.15	1.15	1.15
27 + Diesel Oil (Bbl.).....	1.15	1.15	1.15
*(San Joaquin Valley, San Francisco 4c per bbl. more.)			
NEW ENGLAND			
	(F. O. B. Boston and Fall River)		
30-32 Gas Oil (Gal.).....	- 5¾	- 5¾	- 5½
Fuel Oil (Bunker C) Bbl....	-1.82½	-1.82½	-1.80

PETROLATUMS

PENNSYLVANIA			
Snow White.....	-11	-11	-11
Lily White.....	- 9½	- 9½	- 9½
Cream White.....	- 6¾	- 6¾	- 6¾
Light Amber.....	- 3¾	- 3¾	- 3¾
Amber.....	- 3¼	- 3½	- 3¼
Red.....	- 3¼	- 3¼	- 3¼
Green..... 1¾-	2	1¾- 2	1¾- 2

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

(Continued from Page 145)

gasoline was run into jobbers' storage tanks and how much has been sold cannot be determined. If the April buying was primarily to build up storage, jobbers may not be in the market as actively as is anticipated by many, and gasolines may run into a comparatively quiet period before the summer buying starts. This period of quiet, however, will not necessarily mean a slipping back in prices.

The advance by the Standard of New Jersey in the posted price for export gasoline bought on contracts for shipment to Gulf ports gave the higher gravity gasolines much needed strength. Early in the week approximately 2,000,000 gallons of 64-66, 375 end point gasoline was purchased by exporters from Texas refiners. Prices ranged from 12⅛ to 12½ cents. After the advance Friday, a little material was bought at 12⅝ cents, but refiners generally were holding for a minimum of 12¾ cents, with a few asking 13 cents.

An inquiry was circulated Saturday in the field for some 60-62, 400 e. p. gasoline, but it was not learned whether or not any orders were placed.

NATURAL gasolines closed the week in a chaotic condition, with prices climbing rapidly. The Sinclair Refining Co. is given credit for this situation. That company April 23 and 24 bought in excess of 250 cars of natural gasoline for both spot and over the month shipment. Enough spot material was purchased to take care of practically all the distress gasoline in the field. This stuff and some of their own production went into trainload shipments to California.

Now with the over-the-month purchases spread on the books, a checkup shows that there probably will not be a sizable quantity of naturals offered for at least a week or two on the open market.

Other large handlers of naturals were quick to ascertain this fact, and they began boosting their quotations for both spot and over the month. But everyone appeared reluctant to sell, and by Saturday only a scattering car or two of naturals were moving on spot purchases.

One manufacturer was committed on 150 cars of Grade AA prior to the tank wagon advance last Thursday, and had to sell at 10 cents per gallon. The purchaser wanted 50 additional cars, but was quoted 10¼ cents.

Kerosene 9 Cents and Up

KEROSENES have steadily climbed in price under the combined pressure of demand and tank wagon advances. In Oklahoma, Saturday, brokers were offering 9 cents and over for 41-43 water white kerosene, but were having difficulty in finding it.

Refiners who have been making kerosenes report they are already sold up for some time, and the earliest shipment promise heard was for around May 15. A few buyers have been willing to purchase that far ahead at the present market price, but others are reluctant to risk the price dropping off and causing them to be long on such high priced material.

According to the weekly reports of operations, the 124 refiners reporting to National Petroleum News had on hand April 27 approximately 5,600,000 gallons of kerosene. This is 700 cars of 8000 gallons capacity, an average of 5.6 cars per refiner.

Distillates are holding steady in price, but the demand has dropped off materially in the past few weeks. The fact that prices have not broken is due to the scarcity of material.

Gas oil also is steady, although a soft spot appeared for a day or two when dealers who had overbought began cutting the price in the Chicago district.

Fuel oils are easier to obtain, but refiners are still keeping their prices well in line.

Drilling Superintendent Dies in Colombia

By Telegraph

HOUSTON, May 2.—News reaches Houston of the death, April 28, at Cartagena of J. M. East, superintendent of drilling operations in South America for the J. S. Abercrombie Co., drilling contractors, of Houston. East was killed when he fell from the gangplank of the steamship Bolivar, striking against a projecting part of the dock.

His father, Zack T. East, lives at Tomasket, Washington and a son lives in Boulder, Colo.

Gasoline and Kerosene Prices Soar At Chicago; Gas Oil Stronger

CHICAGO, May 1

PRICES of gasoline and kerosene last week soared to the highest points of the year. Even before Standard Oil Co. of Indiana advanced gasoline prices 1 cent per gallon and kerosene ½ cent Thursday prices were moving upward steadily. All of which apparently was warranted. Balmy weather had brought increased consumption by motorists and when the market opened on Monday, jobber buying was more brisk than at any previous time this year.

Prevailing prices for 58-60 U. S. Motor gasoline on Monday were 10½ to 10⅝ cents and by Wednesday morning the market for this grade was firmly established at 10¾ to 11 cents. Announcement of the intended tank wagon price advance at noon Wednesday caused immediate withdrawal from the gasoline market of almost every dealer in Chicago. On Thursday, Motor gasoline prices averaged 11¼ cents and by the end of the week enough sales were recorded at 11½ cents for this figure to be included in the going price range. Jobber buying at the same time eased off considerably; opinion was that a day or two after the increase in tank wagon, prices would settle to around 11 cents, but such has not been the case.

Some carload marketers in Chicago are long considerable gasoline purchased at around 10½ cents; others have only small quantities coming through under 11 cents.

Persistent rumors are to the effect that crude oil prices will be higher within 10 days. These rumors coupled with the present advancing refinery prices have further tightened the gasoline situation.

Weather in most of Standard Oil Co. of Indiana territory has been favorable and the Weather Man predicts another week of good motoring weather. Showers will be general over the Chicago forecast district about the middle of the week; otherwise the weather will be generally fair. Temperatures will largely average above normal.

Scarcity continues to figure prominently in the kerosene market. Water white 41-43 is quoted to the trade today at 9¼ to 9½ cents; prices were 1 cent lower a week ago. Activity of the past few days has been local jugglings between marketers and refiners trying to cover on old and new orders. Most sales have been made at prices under those quoted to the trade. Small lots of kerosene have been known to change hands four and five times in Chicago alone.

Refinery fuel oils have held remarkably steady over the week; prices are largely unchanged. Considerable low gravity stuff is coming into the market, such as 14-16, 16-18, 18-20, etc. The 18-22 gravity fuel is held at $1.30 and 22-26 at $1.35 although some of the latter is available at $1.30.

PLATT'S
OILGRAM
Petroleum Markets-Every Day

A SALES-MANAGER'S COSTLY ERROR!

THE sales-manager of a refinery in Oklahoma—who is a regular subscriber to the OILGRAM — neglected to tell us that he wanted immediate wires on crude and tankwagon price-changes.

One bright morning crude advanced unexpectedly and before his office learned of the advance, they had sold 20 cars of gasoline at least one-eighth cent under the market.

The sales-manager frankly admitted he had only himself to blame for not notifying the OILGRAM that he wanted wire service on crude and tankwagon changes, in addition to the daily market bulletin from Tulsa. Nevertheless, this negligence cost his company a tidy little sum.

PLATT'S OILGRAM service by wire and daily bulletin is your greatest aid to showing a PROFIT for 1926.

Three months service for $25, or a whole year for $75. Send for your service to the nearest mailing point.

TULSA—608 Bank of Commerce Bldg.
CHICAGO—360 N. Michigan Ave.
CLEVELAND—843 Caxton Bldg.

Week's Price Changes Tank Wagon Market

Gasoline Changes

Standard of New Jersey—T.w. and s.s. prices gasoline at Ohio River points in West Virginia, including Charleston, Parkersburg, Wheeling, Milton and Huntington, advanced ½ cent, **April 24.**

T.w. and s.s. prices advanced 1 cent through territory, excepting North and South Carolina, which were advanced 1½ cents, **April 30.**

Standard of New York—T.w. and s.s. prices gasoline advanced 1 cent, New York and New England, **May 1.**

Atlantic Refining—T.w. and s.s. prices gasoline advanced 1 cent, Pennsylvania, Delaware and New England, **May 3.**

Standard of Kentucky—T.w. and s.s. prices gasoline advanced 1 cent generally through territory, with few exceptions, **May 3.**

Standard of Indiana—T.w. and s.s. prices gasoline advanced 1 cent, through territory, **April 29.**

Standard of Nebraska—T.w. and s.s. prices gasoline advanced 1 cent through Nebraska, excepting Omaha, which was advanced 2 cents, **April 29.**

Standard of Louisiana—T.w. and s.s. prices gasoline advanced ½ cent, Tennessee only, **April 26.**

T.w. and s.s. prices gasoline advanced 1 cent, Tennessee, and 1½ cents Louisiana and Arkansas, **April 30.**

Continental Oil—T.w. and s.s. prices gasoline advanced 1 cent, generally in Colorado, Wyoming, Utah, and New Mexico and most points in Idaho, **May 1.**

T.w. and s.s. prices gasoline advanced 2 cents at Butte and Helena, Mont., **May 3.**

Magnolia Petroleum—T.w. and s.s. prices gasoline advanced 1½ cents, Fort Smith and Little Rock, and ½ cent Texarkana, **April 30.**

Canada—S.s. price gasoline only advanced 2 cents, Cochrane, Ont., to 38 cents, **April 28.**

Kerosene Changes

Standard of New Jersey—T.w. price kerosene advanced ½ cent, through territory, **April 30.**

Standard of New York—T.w. price kerosene advanced 1 cent, New York and New England, May 1.

Standard of Kentucky—T.w. price kerosene advanced 1 cent, generally through territory, **May 3.**

Standard of Indiana—T.w price kerosene advanced ½ cent, through territory, **April 29.**

Standard of Nebraska—T.w. price kerosene advanced ½ cent, through Nebraska, **April 29.**

Standard of Louisiana—T.w. price kerosene advanced ½ cent, through territory, **April 30.**

Magnolia Petroleum—T.w. price kerosene advanced to 13 cent level in Oklahoma, **April 26,** and to 13 cent level in Texas, April 28. Oklahoma City and Tulsa were advanced 1 cent and Muskogee 3 cents. In Texas, Dallas, Fort Worth and San Antonio were advanced 2 cents, to 13 cents, and Houston 1 cent to 13 cents, and El Paso was advanced 1 cent to 14 cents.

Kerosene at all Arkansas points was advanced ½ cent, April 30.

Continental Oil—T.w. price kerosene advanced ½ cent, Wyoming, Montana and New Mexico, **April 28.**

T.w. price kerosene advanced 1 cent, Colorado, and ½ cent generally in Wyoming, Utah and New Mexico, and most points in Idaho, **May 1.**

T.w. price kerosene advanced ½ cent, Butte and Helena, Mont., **May 3.**

Canada—T.w. price kerosene did not advance 1½ cents at Vancouver in the 1½ cent general advance in the maritime provinces on **Feb. 17,** as previously reported in this publication. Kerosene at Vancouver has been 23 cents since Sept. 15, 1925, and the 24.5 cent price shown in the accompanying tank wagon table for the past few issues has been in error.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

These Prices in Effect May 3, 1926

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T. W.	S.S.	Oil T.W
Atlantic City, N. J.	18	0	18	*	15.5
Newark, N. J.	18	0	18	20	15.5
Annapolis, Md.	18	2	20	*	15.5
Baltimore, Md.	18	2	20	23	15.5
Cumberland, Md.	18	2	20	23	15.5
Washington, D. C.	18	2	20	23	14.5
Danville, Va.	18	4½	22.5	*	15.5
Norfolk, Va.	18	4½	22.5	25.5	15.5
Richmond, Va.	18	4½	22.5	25.5	15.5
Roanoke, Va.	18	4½	22.5	25.5	15.5
Petersburg, Va.	18	4½	22.5	*	15.5
Williamsburg, Va.	18	4½	22.5	*	15.5
Charleston, W. Va.	18	3½	21.5	24.5	15.5
Clarksburg, W. Va.	18	3½	21.5	24.5	15.5
Keyser, W. Va.	18	3½	21.5	*	15.5
Parkersburg, W. Va.	18	3½	21.5	24.5	15.5
Wheeling, W. Va.	18	3½	21.5	24.5	15.5
Charlotte, N. C.	18.5	4	22.5	25.5	15.5
Hickory, N. C.	18.5	4	22.5	*	15.5
High Point, N. C.	18.5	4	22.5	*	15.5
Mt. Airy, N. C.	18.5	4	22.5	*	15.5
Salisbury, N. C.	18.5	4	22.5	*	15.5
Charleston, S. C.	18.5	5	23.5	26.5	15.5
Columbia, S. C.	18.5	5	23.5	26.5	15.5

*Dealers set own prices. S. O. New Jersey does not operate station

S. O. NEW YORK

*New York City	20	0	20	24	17
Albany, N. Y.	20	0	20	22	17
Buffalo N. Y.	19	0	19	22	17
Rochester, N. Y.	20	0	20	24	15
Syracuse, N. Y.	20	0	20	22	16
Boston, Mass.	20	0	20	23	17
Augusta, Me.	20	3	23	26	17
Manchester, N. H.	20	2	22	26	17
Burlington, Vt.	20	2	22	24	17

*In steel barrels.

ATLANTIC REFINING

Pittsburgh, Pa.	19	0	19	*24	16
Philadelphia, Pa.	19	0	19	*24	16
Allentown, Pa.	19	0	19	*24	16
Erie, Pa	17	0	17	*22	14
Scranton, Pa.	19	0	19	*24	16
Altoona, Pa.	19	0	19	*24	16
Dover, Del.	19	2	21	24	16
Wilmington, Del.	19	2	21	24	16
Providence, R. I.	20	1	21	24	17
Springfield, Mass.	20	0	20	23	17
Worcester, Mass.	20	0	20	23	17
Hartford, Conn.	20	2	22	25	16
New Haven, Conn.	20	2	22	25	17
Boston, Mass.	20	0	20	23	17

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	18	5	23	26	17
Louisville, Ky.	19	5	24	27	16
Covington, Ky.	18	5	23	26	17
Clarksdale, Miss.	18	4	22	25	15.5
Jackson, Miss.	18	4	22	25	14.5
Natchez, Miss.	17.5	4	21.5	24.5	15
Vicksburg, Miss.	17.5	4	21.5	24.5	15
Birmingham, Ala.	19	2	21	24	17.5
Mobile, Ala.	18	2	20	23	16
Montgomery, Ala*	20	2	22	25	18.5
Atlanta, Ga.	†20	3½	24	27	18
Augusta, Ga.	†20	3½	24	27	18
Macon, Ga.	†20	3½	24	27	18
Savannah, Ga.	†17	3½	21	24	16
Jacksonville, Fla.	18	4	22	25	16
Miami, Fla.	20	4	24	27	17.5
Tampa, Fla.	18	4	22	25	16
Pensacola, Fla.	16	4	20	22	16.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T. W.	S.S.	Oil T.W.
Chicago, Ill.	†18	0	†18	20	14
Decatur, Ill.	18.2	0	18.2	20.2	14.5
E. St. Louis, Ill.	17.1	0	17.1	19.35	13.6
Joliet, Ill.	18.4	0	18.4	20.4	14.7
Peoria, Ill.	18.2	0	18.2	20.2	14.5
Quincy, Ill.	18.2	0	18.2	20.2	14.3
Indianapolis, Ind.	18.2	3	21.2	23.2	14.7
Evansville, Ind.	18	3	21	23	14.5
South Bend, Ind.	18.4	3	21.4	23.4	14.9
Detroit, Mich.	18.8	2	20.8	22.8	15.2
Grand Rapids, Mich.	18.7	2	20.7	22.7	15.1
Saginaw, Mich.	18.9	2	20.9	22.9	15.3
Madison, Wis.	18.3	2	20.3	22.3	14.5
Milwaukee, Wis.	18.1	2	20.1	22.1	14.3
La Crosse, Wis.	19.2	2	21.2	23.2	15.4
Minneapolis, Minn.	19.2	2	21.2	23.2	15.6
Duluth, Minn.	19.5	2	21.5	23.5	15.6
Mankato, Minn.	19.1	2	21.1	23.1	15.4
Des Moines, Iowa	18.5	2	20.5	22.5	14.9
Davenport, Iowa	18.5	2	20.5	22.5	14.9
Sioux City, Iowa	18	2	20	22	14.5
Mason City, Ia.	18.5	2	20.5	22.5	14.9
St. Louis, Mo.	*17.6	2	19.6	21.9	14
Kansas City, Mo.	††18.9	2	20.9	22.9	13.8
St. Joseph, Mo.	*18	2	20	22	13.9
Fargo, N. D.	20.9	1	21.9	23.9	17.6
Grand Forks, N. D.	21.2	1	22.2	24.2	17.9
Minot, N. D.	20.9	1	21.9	23.9	17.6
Pierre, S. D.	20	3	23	25	16.1
Huron, S. D.	20	3	23	25	16.1
Wichita, Kans.	16.8	2	18.8	20.8	13.8
Bartlesville, Okla.	16.8	3	19.8	21.8	13.8

†Dumps of 100 or more gallons at 17c per gallon.
*Includes city tax of ½c.
††Includes city tax of 1c.

S. O. NEBRASKA

Crawford, Neb.	19	2	21	*	15.25
Omaha, Neb.	18.25	2	20.25	22.25	14.5
McCook	19.75	2	21.75	23.75	16
Norfolk	18.75	2	20.75	22.75	15
North Platte	19.75	2	21.75	23.75	15.75
Scottsbluff	19.25	2	21.25	23.25	15.25

*Standard has no service station here.

CONTINENTAL OIL

Denver, Colo.	19	2	21	21	17.5
Pueblo, Colo.	18	2	20	20	17.5
Casper, Wyo.	19	2½	21.5	23.5	16
Cheyenne, Wyo.	20	2½	22.5	24.5	17.5
Butte, Mont.	22	2	24	24	19
Helena, Mont.	24	2	26	28	20
Salt Lake City, Utah.	22.5	3½	26	28	19
Boise, Ida.	24	3	27	29	21
Albuquerque, N.M.	22.5	3	25.5	28.5	19.5

S. O. CALIFORNIA

Phoenix, Ariz.	22	3	25	28	21.5
Los Angeles, Cal.	14.5	2	16.5	20.5	15.5
Fresno, Cal.	16.5	2	18.5	22.5	17.5
San Francisco, Cal.	16	2	18	22	15.5
Reno, Nev.	19.5	4	23.5	27.5	19
Portland, Ore.	16	3	19	23	16.5
Seattle, Wash.	16	2	18	22	16.5
Spokane, Wash.	20	2	22	26	20.5
Tacoma, Wash.	16	2	18	22	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	4	20	23	15
Alexandria, La.	16	2	18	21	15
Baton Rouge, La.	15	2	17	20	13.5
Lake Charles, La.	16.5	2	18.5	21.5	15
New Orleans, La.	*16.5	2	18.5	21.5	14
Shreveport, La.	15	2	17	20	14
Lafayette, La.	16	2	18	21	14.5
Bristol, Tenn.	19.5	3	22.5	25.5	16.5
Chattanooga, Tenn.	19	3	22	25	16.5
Knoxville, Tenn.	19	3	22	25	17
Nashville, Tenn.	18	3	21	24	17
Memphis, Tenn.	17	3	20	23	16

*Includes 1c city tax on gasoline and kerosene.

S. O. OHIO

	Gasoline T.W.	Tax	Total T. W.	S.S.	Oil T.W.
All Ohio points	19	2	21	23	15

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	3	17	20	13
Oklahoma City	14	3	17	20	13
Tulsa, Okla.	15	3	†18	21	13
Fort Smith, Ark.	16	4	20	23	15
Little Rock, Ark.	16	4	20	23	15
Texarkana, Ark*	17	4	21	24	13.5
Dallas, Tex.	14	1	15	17	13
El Paso, Tex.	17	1	18	18	14
Fort Worth, Tex.	13	1	14	15	13
Houston, Tex.	15	1	16	18	13
San Antonio, Tex.	14	1	15	15	13

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

†18c to regular power trade, 20c to all other tank wagon consumers.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline)

	Oleum Spirits	V.M.&P. Naphtha	Cleaners Naphtha
Chicago	19	21	21
Detroit	20.2	22.7	22.7
Kansas City	19.2	21.2	21.2
Milwaukee	19.2	23.7*	23.7
Minneapolis	20.5	25*	25*
St. Louis	18.4	20.9	22.2
New York		21	

*Including state tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total	S.S.	Oil T.W.
Toronto	24.5	3	27.5	31	21.5
Ottawa	25.5	3	28.5	32	22.5
Cochrane	29.5	3	32.5	38	26
Ft. William	27.5	3	30.5	35	23.5

MANITOBA

Winnipeg	27.5	3	30.5	34	23.5

SASKATCHEWAN

Regina	29.5	0	29.5	34	25.5

ALBERTA

Edmonton	31.5	2	33.5	37	27.5
Calgary	29.5	2	31.5	35	26.5

BRITISH COLUMBIA

Vancouver	23	3	26	30	23

QUEBEC

Montreal	24.5	3	27.5	31	20
Quebec City	26.5	3	29.5	33	22
Three Rivers	26.5	3	29.5	33	23.5

NEW BRUNSWICK

St. John	27.5	3	30.5	35	26.5
Moncton	27.5	3	30.5	35	26.5

NOVA SCOTIA

Halifax	27.5	3	30.5	35	24.5
Sydney	29.5	3	32.5	33	26.5

PRINCE EDWARD ISLAND

Charlottetown	27.5	2	29.5	33	24.5

Note: In districts surrounding these points 1c additional is added to city price.

Advance Here Stimulates Export Gasoline; Lubricating Oils Weak

By Special Correspondent
NEW YORK, May 3

HIGHER gasoline prices in the Mid-Continent, Gulf and New York markets created a much keener export buying interest, and it is reported that several cargoes have been sold. Kerosene was also higher at New York and the Gulf, but foreign demand lagged. Gas oil is another bright spot. Prices are tending higher.

Waxes for the first time in several weeks showed some signs of life in the export market, although business was far from spirited. Lubricating oils, however, were dull and weak, and it was reported that a large independent sold a cargo in the Gulf at prices averaging three cents a gallon below the big refiners.

Export Gasoline—New York

At the start of the week U S. Motor was available at as low as 12¼ cents a gallon on a bid. A day or so later there was nothing available below 12½ cents, while on Saturday the inside price was 13½ cents. A British buyer, it is reported, bought a cargo of 45,000 barrels of Motor and 64-66, 3.75 e.p. gasoline for May-June shipment, but details were not disclosed. A French buyer was negotiating for a cargo of 50,000 barrels of U. S. Motor and 61-63 gravity gasoline for May-June shipment, and it is expected this will be consummated early this week. Cased gasoline remained quiet but firm throughout the week. There are rumors of another impending advance. Cased gasoline was advanced one half cent on Friday.

Export Gasoline—Gulf Ports

Export demand for gasoline was much improved last week, but refiners were not inclined to divulge details of various deals. However, it was reported that a leading Independent had booked a cargo of U. S. Motor and 64-66 3.75 e. p. of 52,000 barrels for shipment to France soon at 11½ and 14½ cents a gallon. As the week closed Motor was unavailable below 12 cents, while some interests were asking up to 12½ cents. For 64-66 3.75 e. p. the price was 15 cents, with one refiner asking 15½ cents a gallon. The strong Mid-Continent market was held largely responsible for the advance in this territory. A British buyer is reported to have practically closed 40,000 barrels of Motor and 61-63 gravity gasoline for June shipment, but details were not made known. A leading refiner was working on an inquiry from the far East for 40,000 cases of Motor and 64-66 gravity for June shipment, while another has practically closed an order for 50,000 cases of Motor and 64-66 gravity for June shipment to Australasia.

Domestic Gasoline—New York

Domestic demand for gasoline was much improved last week. Weather conditions were somewhat better, but the temperature was still below normal. However, consumption is soaring and leading Independents have advanced the price of Motor all along the Atlantic seaboard. On April 29 Sinclair advanced Motor to 13 cents at local refineries, and 14 cents in tank cars delivered to the trade. Reports of tank wagon advances throughout the middle west have led many to look for higher tank wagon prices here soon.

Domestic Gasoline—Gulf Ports

On May 1 Sinclair advanced bulk Motor gasoline in tank cars at refineries to 13½ cents a gallon, an advance of 1 cent over the previous week. Consumption is mounting rapidly. Stocks are moderate but, as all indications point towards a heavy export movement shortly, refiners are reluctant to offer very far ahead. Tank wagon prices are expected to be higher soon.

Export Kerosene—New York

Export demand for kerosene failed to show any improvement. A marketer booked an export order for 15,000 cases of water white for shipment soon to the near East. Prices were firmer and water white advanced ½ cent to 10 cents bulk, refineries. A Chinese buyer was inquiring for 35,000 cases of prime and water white kerosene for immediate shipment, but this has not materialized. Prime white in bulk at local refineries was held at 9¼ cents a gallon. April 30 the Standard Oil Co. of New Jersey advanced cased kerosene ¼ cent a gallon.

Export Kerosene—Gulf Ports

Prices were decidedly firmer at the close of the week, with leading factors asking 8¾ to 9 cents for water white, and 7¾ to 8 cents for prime white in bulk, cargoes. Export demand was spasmodic and light, but the advance in the Mid-Continent market improved sentiment and there is little of either available at the inside prices. Cased water white in cargo lots was held at $1.85 to $1.90 a case, while prime was quoted at $1.75 to $1.80.

Domestic Kerosene

Domestic consumption has been unusually large for this time of the year. Some refiners cut down production some time ago, not figuring on such a long winter, and, consequently, have some difficulty taking care of regular customers. Stocks are reduced both at Atlantic seaboard and Gulf ports. At New York water white is held at 10½ cents refinery, and 11½ cents tank cars delivered to the trade. Tank wagon prices are firmly held.

Lubricants—New York

Lubricating oils remained quiet, regardless of the improvement in light oils. Export demand for most Pennsylvania oils continued disappointing and there was more pressure to sell. Pennsylvania cylinder stocks were dull and weak and 600 s. r. barrels, New York, was offered freely at 22½ cents, with reports that this price might have been shaded on a firm bid. Paraffin oils were dull and weak. Export buying was mainly in lots of two or three hundred barrels.

Lubricants—Gulf Ports

There was a report current of a bulk cargo of 45,000 barrels of Gulf Coast lubes sold from three to four cents a gallon below the quotations of the leading refiners. The Gulf market has been weak and export buyers have been bidding considerably below refiners' ideas. Details were not disclosed, although several refiners are convinced the transaction went through. Continental buyers are inquiring in a slightly more active way, but are still confining their buying to very small quantities.

Waxes—New York

While business was still hand-to-mouth, there was a much better feeling in the trade. Holders are more confident, and one factor expressed the belief that there is a short interest in the market, which sellers expect will be forced to cover shortly. Foreign buyers are showing more attention, although their orders are still for a few tons for immediate shipment.

White crude scale waxes were still quoted on a basis of 5⅛ cents a pound for 122-124 A.m.p. while semi refined is quoted at 5¼ cents for 122-124 A.m.p. Fully refined 120-122 A.m.p. is held at 6 cents.

Waxes—Gulf Ports

Demand for white crude scale was a trifle better than the previous week but prices showed very little change. United Kingdom buyers are reported inquiring for larger quantities, although still holding their orders down to barest necessities. White crude scale 122-124 A.m.p. was held at 5⅛ cents, while semi-refined 122-124 A.m.p. was quoted

at 5¼ cents. Fully refined grades were quoted as follows; 123-125 A.m.p. 5¾ cents; 125-127 A.m.p. 5⅞ cents; 128-130 A.m.p. 6 cents; 133-135 A.m.p. 6⅛ cents, and 135-137 A.m.p. 6⅝ cents.

Bunker Oil—New York

Held steady last week. Little or no export buying reported and much of the activity was against contracts. No cargo movements were heard of. Local factors are still holding grade C at $1.75 a barrel at the refineries and $1.81½ f.a.s. New York harbor refineries. Demand for diesel oil was slightly better at $2.41½ f.o.b. New York harbor refineries.

Bunker Oil—Gulf Ports

There was an inquiry from the Continent for a cargo of 45,000 barrels of grade C. but whether this was closed is uncertain. Prices did not show much change. For bunkering Grade C was held at $1.60, while in cargoes $1.50 f.o.b. could have been done on a bid. At Tampico the price for bunkering was $1.50, including taxes, while in cargo lots $1.45 could have been done. Heavy Panuco crude oil was steady at $1.18 f.o.b. Tampico, taxes to be added.

Gas Oil—New York

Gas oil showed a firmer tendency last week, and there was no 36-40 available below 6½ cents at New York harbor refineries, while 28-34 was well maintained at 5¾ cents. Export demand was not very active, but domestic consumption is large and most local refiners are offering more sparingly. With gasoline on the upward swing, refiners are inclined to crack their gas oil, and there is comparatively little offered for future shipment. On the other hand export inquiries are more numerous. A British buyer was inquiring for 45,000 barrels for nearby shipment, but this has not materialized as yet.

Gas Oil—Gulf Ports

One of the leading Independents is reported to have booked 45,000 barrels of 26-28 transparent at 5¼ cents for nearby shipment to the Continent. Another was working on a similar cargo for May shipment, presumably to the United Kingdom. The market is stronger and offerings are lighter than a week ago. For 32 plus dark the price was fairly firm at 5 cents a gallon.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

20192.—**White paraffin wax**, London, England, purchase.

20194.—**Paraffin slab and scale**, Elberfeld, Germany, purchase.

20195.—**Marine lubricating oils**, Guayaquil, Ecuador, purchase.

19862.—**Petrolatum**, white oil, and paraffin wax, Melbourne, Australia, purchase.

Complete Export Markets

New York Export Market

GASOLINE	May 3	April 26
U. S. Motor Tank cars Ref.	13½	-12½
U. S. Motor cases	28.90	-28.40
California grade U. S. Motor F. O. B. N. Y. Bulk	13	-12½
KEROSENE		
41-43-150 W. W. Tank cars Ref.	10½	-09¾
41-43-150 W. W. Cases	19.65	-19.40
42-44-110 S. W. Cases	18.40	-18.15
GAS OIL		
36-40, Bulk Refinery	-06½	-06½
28-34, Bulf Refinery	-05¾	-05¾
MEXICAN BUNKER OIL		
Grade C, f. o. b. ref. Bulk	1.75	- 1.75
Diesel Oil f. o. b. ref. Bulk	2.41½	- 2.41½

LUBRICATING OILS

The following prices are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (Bbls.) 1 inch Immersion Test; All Penna. Products	
Filtered D 600	-30
Filtered E 600	-29
Unfiltered 600 s. r.	-22½
Unfiltered 650 s. r.	-29
600 flash s. r.	-30
630 Flash	-41
RED PARAFFIN (Bbls.) (Viscosity at 70)	
300 vis. No. 5 color	-21
250 vis. No. 5 color	-20
High Viscosity No. 5 color	-25
NEUTRAL OILS (Bbls.) (Viscosity at 70)	
200 vis. at F. Pale. No. 3 color	-31
180 Pale. No. 3 color	-29
150 Pale. No. 3 color	-24½
BLACK OIL (Bbls.)	
25-30 cold test	-13
15 cold test	-14¾

MEDICINAL OILS
(Includes Price of Drums)
(Penna. Stocks)

	May 3	April 26
Domestic 875-.885 s. g.	1.00-1.08	1.00-1.08
Domestic 865-.870 s. g.	.75- .80	.75- .80
Russian 885-.890 s. g. 325-330 vis.	1.20-1.25	1.20-1.25

WAXES
(Penna. Stocks)
(F. A. S. Carload Lots)

WHITE CRUDE SCALE		
122-124 A. m. p.	-05¾	-05¾
124-126 A. m. p.	-05¾	-05¾
MATCH		
105-108 A. m. p.	-06	-06
FULLY REFINED		
120-122 A. m. p.	-06	-06
125-125 A. m. p. Philadelphia	-06	-06
125-127 A. m. p.	-06⅛	-06⅛
128-130 A. m. p.	-06¼	-06¼
130-132 A. m. p.	-06⅜	-06⅜
133-135 A. m. p.	-06⅝	-06⅝
135-137 A. m. p.	-06¾ 07	-06¾ -07
SEMI REFINED		
122-124 A. m. p.	-05¾	-05¾
YELLOW CRUDE SCALE		
124-126 A. m. p.	-05	-05

PETROLATUMS
(Penna. Stocks)
Per Pound

Dark Green	03	03
Veterinary	03¼	03¼
Light Amber	03¾	03¾
Dark Amber	03¾	03¾
Cream	06¾	06¾
Lily White	08½	08½
Snow White	11¾-11½	11¾-11½

Gulf Export Market

GASOLINE
F. O. B. Seaboard
Shipments of 20,000 Bbls. and over

	May 3	April 26
U. S. Motor, Cargo	12	11½-.11¾
60-62 400 e. p. Bulk	13¾	-.13¾
64-66 375 e. p. Bulk	15	-.14½
U. S. Motor, Cases (cargo lots)	2.20	2.15
64-66, Cases (cargo lots)	2.45	2.40
KEROSENE		
Water White, 41-43 bulk	08¾-09	-08½
Prime White, 42-44 bulk	07¾-08	-07½
Water White, cases (cargo lots)	1.85	-1.80
Prime White, cases (cargo lots)	1.75	-1.70
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, bulk*	05¼-05½	-05¼
32 plus, bulk, Dark	05	-05
Grade C, Bunker oil	1.60	-1.60
Cargoes	1.45	-1.45

*Transparent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS
F. O. B. Steamer Tampico

Heavy, Taxes to be added	1.18	-1.18
Grade C, Bunker oil Taxes paid	1.40-1.45	1.40-1.45
Grade C, Bunker oil F. O. B. New Orleans	1.60	-1.60

SOUTH TEXAS
(Viscosity at 100°F; cold test 0)
(Tanker, F. O. B. Houston)

*LUBRICATING OILS	May 3	April 26
100 Vis. No. 2 Unfiltered Pale	07	07
150 Vis. No. 2½ Unfiltered Pale	09	09
200 Vis. No. 3 Unfiltered Pale	11	11
300 Vis. No. 3 Unfiltered Pale	13	13½
500 Vis. No. 3½ Unfiltered Pale	12	12
200 Vis. No. 5½ Red Oil	11	11
300 Vis. No. 5½ Red Oil	12	12
500 Vis. No. 6 Red Oil	13½	13
800 Vis. No. 6 Red Oil	16	16

*These prices are entirely nominal owing to wide fluctuations.

Pacific Export Market

(Cargo lots quotations at seaboard, Los Angeles

	May 3	April 26
Gasoline, U. S. Motor— 54°-56°	11 -11¼	11 -11¼
Gasoline, U. S. Motor— blends and special cuts	11¼-11½	11¼-11½
Gas Oil, 24°—30°B. per bbl.	$1.15	$1.15
Diesel Oil, 27°B—plus per bbl.	$1.15	$1.15
Bunker Oil, 14°—18°B. per bbl.	$1.00	$1.00
Fuel Oil, 14°—18°B. per bbl.	$1.00	$1.00
Kerosene, W. W. 40°—42° B per gal., 125-150 flash test	.06 -07	.06 -07
Cased Goods		
Gasoline, U. S. Motor	$2.55	$2.55
Kerosene, W. W. 38°—40° B per case, flash test 125-150	$1.50-1.55	$1.50-1.55

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being products made from Domestic (including California) and Mexican Crudes.

	May 3	April 26
U. S. Motor Gasoline, Tank Cars Delivered greater N. Y.	-14½	-13½
U. S. Motor Gasoline, Tank Cars Bayonne	-13½	-12½
Kerosene, 41-43 150 W. W. Tank Cars De'd greater N.Y.	-11½	-.10¾
Grade C Bunker f.o.b. N.Y. Ref.	1.75	1.75
Diesel Oil f. o. b. Refinery	2.41½	2.41½
Gas Oil, 36-40, Bulk Refinery	-06½	-06½
Gas Oil 28-34 Bulk, Refinery	-05¾	-05¾

Crude Oil Prices All Fields

PRICES IN EFFECT, *May 3*

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.65
Bradford District Oil in National Transit Lines (Bradford District)	3.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.30
Keister Grade in National Transit Lines (Butler Co.)	2.45
Gaines, Tioga Co. (Pa.)	3.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	2.20
Corning Grade in Buckeye Pipe Lines (Ohio)	2.35
*Somerest Medium in Cumberland Pipe Lines (Kentucky)	2.30
*Somerset Light in Cumberland Pipe Lines (Kentucky)	2.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	1.15

*Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$2.35	Illinois	$2.12
Lima	2.28	Plymouth	1.65
Waterloo	1.10	*Canadian Petrolia	2.63
Indiana	2.00	*Posted by Imperial Oil, Ltd.	
Princeton	2.12		

OKLAHOMA, KANSAS And NORTH TEXAS FIELDS

(Prices of Prairie Oil & Gas Co.)
(Prairie's prices apply in Oklahoma, Kansas, North and Central Texas)

28-28.9	$1.40	41-41.9	$2.44
29-29.9	1.48	42-42.9	2.52
30-30.9	1.56	43-43.9	2.60
31-31.9	1.64	44-44.9	2.68
32-32.9	1.72	45-45.9	2.76
33-33.9	1.80	46-46.9	2.84
34-34.9	1.88	47-47.9	2.92
35-35.9	1.96	48-48.9	3.00
36-36.9	2.04	49-49.9	3.08
37-37.9	2.12	50-50.9	3.16
38-38.9	2.20	51-51.9	3.24
39-39.9	2.28	52 and above	3.32
40-40.9	2.36		

The Texas Co. adopted same schedule as Prairie on Feb. 1.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie and Moran crudes all in Texas.)

Effective Feb. 1, Humble posted same gravity and price schedule in all the above fields as that posted by Prairie, excepting that Humble is paying 8c less for each full degree below 28 gravity.

Magnolia Petroleum Co. Prices In Oklahoma, Kansas and North Texas

Effective Feb. 1, Magnolia posted same gravity and price schedule as Prairie, in all fields where it purchases on a gravity basis, excepting that it is paying $1.20 for all oil below 28 gravity.

Effective Feb. 1, Corsicana heavy was advanced to $1.15 per barrel.

NORTH LOUISIANA—ARKANSAS FIELDS

***Prices of the Standard Oil Co. of Louisiana**

Caddo, below 32	$1.85
" below 32-34.9	2.00
" 35-37.9	2.10
" 38 and above	2.20
Homer, below 31	1.60
" 31-32.9	1.75
" 33-34.9	1.85
" 35 and above	1.95
Haynesville, below 33	1.75
" 33 and above	1.85
El Dorado, below 33	1.75
" 33 and above	1.85
Bull Bayou, 32-34.9	1.70
" 35-37.9	1.85
" 38 and above	2.00
Smackover, below 24	1.00
" 24-24.9	1.25
" 25-25.9	1.30
" 26-26.9	1.35
" 27 and above	1.40
De Soto	2.05
Crichton	1.85
Bellevue	1.50
Cotton Valley	1.10
**Urania, La	1.30

*Same prices maintained by The Texas Co., Gulf Refining Co. of Louisiana and Louisiana Oil Refining Corp. All purchasers of Smackover have maintained since Feb. 1 and 2, the same gravity and price schedule as Standard. Gulf is paying 95c for Calion (East El Dorado Crude.)

**Posted by Louisiana Oil Refining Corp.

STEPHENS, ARKANSAS

Posted by Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

26 and above....$1.50 Below 26.....$1.30

GULF COASTAL FIELDS

Posted by Humble Oil & Refining Co.

Grades A	$1.50	29-29.9	$1.65
Grades B:		30-30.9	1.70
Below 25	1.40	31-31.9	1.75
25-25.9	1.45	32-32.9	1.80
26-26.9	1.50	33-33.9	1.85
27-27.9	1.55	34-34.9	1.90
28-28.9	1.60	35 and above	1.95

Humble is paying the above prices in Goose Creek, Hull, Liberty, West Columbia, Orange and Pierce Junction fields. All other Gulf Coastal crudes are classified as A grades only. Other major purchasers are The Texas Co., Gulf Production Co., Sun Oil Co., and Sinclair Crude Oil Purchasing Co.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co. and Midwest Refining Co.

†Salt Creek 29-29.9	$1.48
Salt Creek 30-30.9	1.56
Salt Creek 31-31.9	1.64
Salt Creek 32-32.9	1.72
Salt Creek 33-33.9	1.80
Salt Creek 34-34.9	1.88
Salt Creek 35-35.9	1.96
Salt Creek 36-36.9	2.04
Salt Creek 37 and above	2.12
Elk Basin	2.15
Grass Creek light	2.15
Big Muddy	2.00
Lance Creek	2.15
Rock Creek	2.00
†Osage	2.15
†Cat Creek, Mont	2.15
Sunburst, Mont	1.15
†Hogback, N. Mex	2.20
Artesia, N. Mex	1.70

†Posted by Midwest Refining Co. Midwest also buys Grass Creek light, and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by *Union Oil Co.

Gravity	Signal Hill Huntington Beach	Ingle-wood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Monte-bello	Coyote Hills	Santa Fe Springs	Midway-Sunset Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	.....	$ .85	$ .85	.....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.87	.87	.85	.75	.87	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
16-16.9	.90	.90	.85	.75	.90	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
17-17.9	.94	.94	.85	.75	.94	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
18-18.9	.98	.98	.86	.75	.98	.....	.86	.86	.....	.75	.75	.75	.75	.85	.85
19-19.9	1.04	1.04	.87	.75	1.04	.....	.87	.87	.....	.75	.75	.75	.75	.85	.85
20-20.9	1.10	1.10	.89	.....	1.10	.....	.89	.90	.....	.82	.82	.79	.78	.90	.90
21-21.9	1.16	1.16	.91	.....	1.16	.....	.91	.98	.....	.90	.90	.86	.81	.97	.97
22-22.9	1.22	1.22	.94	.....	1.22	.....	.94	1.06	.....	1.00	1.00	.93	.85	1.04	1.04
23-23.9	1.28	1.28	.....	.....	1.28	.....	.97	1.14	.....	1.11	1.11	1.00	.89	1.11	1.11
24-24.9	1.34	1.34	.....	.....	1.34	$1.34	1.01	1.22	1.02	1.22	1.22	1.07	.93	1.18	1.18
25-25.9	1.40	1.40	.....	.....	1.40	1.40	1.05	1.30	1.08	1.33	1.33	1.14	.97	1.25	1.25
26-26.9	1.46	1.46	.....	.....	1.46	1.46	1.09	1.38	1.16	1.44	1.44	1.21	1.01	1.32	1.32
27-27.9	1.52	1.52	.....	.....	1.52	1.52	1.13	1.46	1.24	1.55	1.55	1.28	1.05	1.39	1.39
28-28.9	1.58	1.58	.....	.....	1.58	1.58	1.17	1.54	1.32	1.66	1.66	1.35	.....	1.46	1.46
29-29.9	1.64	.....	.....	.....	1.64	1.64	1.21	1.62	1.40	1.77	1.77	1.42	.....	1.53	1.53
30-30.9	1.70	.....	.....	.....	1.70	1.70	1.25	1.70	1.48	1.88	1.88	1.49	.....	1.60	1.60
31-31.9	1.76	.....	.....	.....	.....	1.76	.....	.....	1.60	1.99	1.99	1.56	.....	.....	1.67
32-32.9	1.84	.....	.....	.....	.....	1.84	.....	.....	1.72	2.10	2.10	1.63	.....	.....	1.73
33-33.9	.....	.....	.....	.....	.....	1.92	.....	.....	1.84	2.21	2.21	1.70	.....	.....	1.79
34-34.9	.....	.....	.....	.....	.....	2.00	.....	.....	1.96	.....	2.32	1.77	.....	.....	1.85
35-35.9	.....	.....	.....	.....	.....	2.08	.....	.....	2.08	.....	.....	1.84	.....	.....	1.92
36-36.9	.....	.....	.....	.....	.....	2.16	.....	.....	2.16	.....	.....	.....	.....	.....	
37-37.9	.....	.....	.....	.....	.....	2.24	.....	.....	2.24	.....	.....	.....	.....	.....	
38-38.9	.....	.....	.....	.....	.....	2.34	.....	.....	2.34	.....	.....	.....	.....	.....	
39-39.9	.....	.....	.....	.....	.....	2.44	.....	.....	2.44	.....	.....	.....	.....	.....	
40-40.9	.....	.....	.....	.....	.....	2.54	.....	.....	.....	.....	.....	.....	.....	.....	
41-41.9	.....	.....	.....	.....	.....	2.64	.....	.....	.....	.....	.....	.....	.....	.....	
42-42.9	.....	.....	.....	.....	.....	2.74	.....	.....	.....	.....	.....	.....	.....	.....	

*Union Oil Co. also purchases Long Beach crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees; and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	May 3	April 26
Soda Ash light 58% bags.cwt.	-$1.38	-$1.38
Silicate of Soda 60 deg. drums.....cwt.	- 1.65	- 1.65
Sal Soda wks.....1.10-	1.25	1.10- 1.25
Caustic Soda 70% solid..cwt.	- 3.10	- 3.10
Chloride of Lime.....cwt. works.....	- 2.00	- 2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	-10.00	-10.00
Liquid Chlorine tank cars works.....lb.	- .04	- .04

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads spot.....lb.	11	11.1
May.....	11	11.1
Tanks, spot.....	10	10.1
Boiled carloads spot.....lb.	11.1	11.3
*Soya Bean spot, Bbls....lb.	13½	13½
Animal Oils—		
English Degras.....lb.	.05½	-.05½
Domestic Degras, bbls., carloads.....lb.	-.04¾	-.04¾
*Horse.....lb.	-.09½	-.09½
Oleic Acid—		
Dist. Bbls.....lb..10¾	-.11	.10¾-.11
Saponified Bbls.....lb..11	-.11¼	.11 -.11¼
Castor Oil—		
No. 1 Carlots, Bbls.....	-.13¼	-.13¼
No. 3 Carlots, Bbls.....	-.12¾	-.12¾
Lard Oils—		
Prime		
Winter Strained. to 1½ffa.40/45c.t.lb.	.17	.16¾
Extra		
Winter Strained. 2 to 4½ffa.40/45c.t.lb.	.13¼	.13
Extra..... 4 to 5 ffa.40/45c.t.lb.	.12¾	.12½
Extra No.1 7 to 10 ffa.40/50c.t.lb.	.12½	.12¼
No. 1.....15 to 18 ffa.40/45c.t.lb.	.12¼	.12
No. 2.....22 to 28 ffa.40/45c.t.lb.	.12	.11¾
Prime Edible Tallow under 1½ffa. 40/45c.t.N.Y.....lb.	-.09¼	-.09½
Tallow acidless.....lb.	-.12½	-.12¼
Lard Stearine.....lb.	nominal	nominal
Oleo Stearine.....lb.	-.12¼	-.11
Neatsfoot Oil—		
Pure.....bbls.-lb.		.16¾ .16½
Extra.....do lb.		.12½ .12¼
No. 1.....bbls.-lb.		.12¾ .12
Cold pressed.....lb.		-20½ .20¼
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.		-.65 -.65
White.....gal.		-.67 -.67
Yellow bleached.....gal.		-.70 -.70
*Herring tank cars coast.....gal.		-.50 -.50
Whale, extra winter bleached.....gal.		-.82 -.82
Seal.....gal.		Nominal
Naval Stores—		
Turpentine, N. Y.....gal.		.87½ .92½
Turpentine†.....gal.		.80½ .86½
Rosin, B. N. Y.....bbl.		8.40 8.40
Rosin, F. N. Y.....bbl.		11.90 12.50
Rosin, B†.....bbl.		6.75 6.75
Rosin, F†.....bbl.		10.45 11.00
Rosin Oil 1st run.....gal.		.55 .55
Rosin Oil 2nd run.....gal.		.60 .60
Pine Tar—		
Kiln Burnt.....bbl.		14.50 14.50
Retort.....bbl.		15.50 15.00
†Savannah, Ga. market. *Nominal.		
Alcohol—Denatured		
Formula 5		
Bbls.....gal.		-30 -31
Drums.....gal.		-25 -27

Sulfuric Acid, Caustic Soda Are Firmer

By Special Correspondent

NEW YORK, May 3.—Following is a review of the markets for oils and supplies used in compounding and refining.

Linseed Oil demand better. Paint makers buying more freely. The leading linoleum manufacturers are buying along hand-to-mouth lines. Flaxseed prices have been fairly well maintained the greater part of the week. Soya bean oil is quiet and unchanged.

Soda Ash quiet. Export demand less active. Domestic buying chiefly hand-to-mouth.

Sal Soda steady. Business routine. More interest in futures. Stocks moderate. No export buying.

Caustic Soda demand better. More interest in futures. Prices slightly firmer. Offerings for prompt shipment steadily absorbed.

Sulfuric Acid demand better. Prices much firmer reflecting upward trend in sulfur. Stocks small.

Liquid Chlorine demand slightly better. Price steady at 4 cents a pound in tank cars, works.

Animal Oils quiet. Demand routine. More interest in neatsfoot oil. Oleo oil dull. Oleic acid demand better. Horse oil quiet. Tallow oil demand slightly more active. Oleo stearine quiet.

Fish Oils quiet. Crude menhaden oil still nominal and unchanged. Light pressed menhaden oil demand better at 65 cents gallon, barrels, New York. Whale oil moving slightly better. Domestic cod oil steady at 58 to 60 cents gallon barrels, New York.

Naval Stores quiet. Demand for turpentine has been disappointing which is attributed to the backward painting season. Rosins are firmer, under a growing demand. Rosin oil is marking time. Tar and pitch are a trifle easier.

Benzol Advanced

Special Correspondent

NEW YORK, May 3.—Effective today the Barrett Co. advanced pure and 90 per cent benzol one cent a gallon. The new prices are listed below. The advance was due to waning production, while demand has been better than expected.

Motor benzol, although still quoted at 24 cents, in tank cars at the ovens, is moving freely although production is steadily declining. Consumption is soaring and marketers are finding about all they can do to take care of their outstanding contracts. Many marketers of benzol blends are anxious to cover their summer requirements.

The Barrett Co. prices are:

	Tank Cars	Drums
Motor Benzol, ovens	24c	..
Commercially pure benzol	25	30
Commercial 90% benzol	25	30
Commercially pure toluol	35	40
Commercial xylol	36	41
Solvent Naphtha	35	40

KANSAS CITY, May 1.—R. R. Risser, who was associated with the local office of the former Waite Phillips Co., has joined the sales department of the Bell Oil & Gas Co. of Tulsa, and today was placed in charge of a new branch office opened here by the Tulsa company.

Gulf Coastal Lubricant Market Is Stronger

HOUSTON, May 3.—Inquiries for bulk cargoes of Gulf Coastal lubricants are now going the rounds in addition to committments over the next 90 days covering all grades that shipping companies feel they will be able to fill. One Independent manufacturer reports the sale of 60,000 to 75,000 barrels of assorted grades to move from the Houston ship canal in two or three small cargoes before July 1. Domestic jobbing demand has picked up in the last two weeks and the market is showing strength without actual price advances. Advances, however, are expected within 30 days if present conditions continue, sales managers say.

Eastern and Central Kentucky Markets

LEXINGTON AND ASHLAND, KY., May 3.—Advances are noted on all products in the eastern and central districts of the Kentucky market today with the exception of gas oil which has dropped ¼c in the central district. Today's quotations are:

	Eastern	Central
58-60 Gasoline	14	13-13¼
60-62	14¾	14
64-66	15¼	14⅛
68-70	15¾	15
Fuel oil	5⅛	5⅛
Kerosene		10⅛
Gas oil	6¼	6

CLEVELAND, O.—Union Oil Co. of California is abandoning its Vermijo Park test, Colfax county, N. M., at 4411 feet. This test is located in the center of the northwest of 23-31n-18e.

OIL STOCKS AND FINANCES

National Petroleum News

Skelly Oil Reports Big Improvement In Operations During 1925

Staff Special

CLEVELAND, May 3

SKELLY OIL CO. shared well in last year's improvement in petroleum markets and reports net profits of $3,921,440 for the year after all reserves and charges. This amount was equivalent to $4.43 on the average number of $25 shares outstanding during 1925 and $4.24 on the amount outstanding at the end of the year. In 1924 net profits amounted to only 5 cents a share. Increased profit enabled the company to start dividends at 8 per cent per year.

The Skelly company's business not only expanded but the organization was in better position to realize on its assets, President W. G. Skelly reported to stockholders. Prospects for 1926 were bright, he said, and he was especially enthusiastic over the company's operations in the Panhandle district of Texas, where the company has almost 100,000 acres, 29,000 of which lie in the proven trend. The company has completed three producing wells in the Panhandle and was drilling six more a month ago when his report was written. A natural gasoline plant is being built in the Panhandle.

A comparison of the company's business in 1925 and 1924 follows:

	1925	1924
Gross business	$ 23,007,516	$ 18,296,828
Net for surplus and reserves	8,538,864	4,707,054
Surplus income	3,755,716	22,342
Land leased or held in fee (acres)	290,789	269,249
Oil and gas wells	1,086	996
Crude produced (bbls.)	5,119,442	4,416,775
Gasoline output (gals.)	104,501,640	88,166,160
Lube and light refined oil output (gals.)	29,352,686	21,533,207
Fuel oil output (bbls.)	1,410,417	1,384,090
Products sold through own stations (gals.)	27,522,296	23,250,490

Skelly's production for the six full years the company has been in business has been (amounts in barrels):

Year	Total Production	Daily Average
1925	5,119,442	14,026
1924	4,416,776	12,067
1923	5,926,650	16,237
1922	3,969,312	10,874
1921	2,874,550	7,875
1920	1,639,722	4,480

Skelly property at the end of 1925 included 197 producing properties; a 15,000-barrel refinery at El Dorado, Kan., 11 natural gasoline plants; 270 miles of trunk and lateral pipe lines; 973 tank cars, and 258 bulk and service stations.

The balance sheet of Dec. 31, 1925, shows the company to have been in the strongest position since its organization. Current assets before deducting a reserve of $1,050,000 in connection with its short term notes, amounted to $7,948,239 and current liabilities to $2,813,971. Cash and United States securities alone were slightly in excess of all current liabilities. During 1925 the company reduced current and funded debts by almost $6,000,000.

Property account shows increase of more than $2,000,000 and depreciation and depletion reserves more than $1,000,000. Depreciation and depletion reserves amount to more than 40 per cent of value at which property is carried.

Skelly Oil Co. Income Accounts

	1925	1924	1923	1922	1921
Gross earnings	$23,007,516	$18,296,828	$19,592,357	$16,683,365	$12,160,344
Expenses, insurance, taxes, etc	13,525,607	12,613,271	11,559,429	10,443,698	8,185,072
Net earnings	$ 9,481,909	$ 5,683,557	$ 8,032,928	$ 6,239,667	$ 3,975,172
Interest and discount	943,045	976,503	849,714	482,052	325,974
Depreciation, depletion	4,617,324	4,665,320	6,059,483	4,116,555	3,989,354
Net profits	$ 3,921,440	$ 41,734	$ 1,123,731	$ 1,641,060	*$ 338,056

*Deficit.

Skelly Oil Co. Consolidated Balance Sheets as of Dec. 31

	1925	1924	1923	1922	1921
ASSETS					
Property and plant	$53,516,757	$51,501,013	$48,797,601	$38,593,953	$28,347,679
Investments, advances to affil. cos	597,896	611,015	534,828	534,410	670,367
Other investments	1,223	3,723	13,953	16,001	.....
Advances for leases drilling	640,166	475,807	344,946	406,752	689,308
Specific funds	50,596	28,729	29,441	28,106	.....
Employes' stock subs., advances	289,152	186,907	.....	.....	.....
Cash	1,467,515	3,585,959	711,905	623,766	2,286,004
Marketable securities	1,350,000	.....	.....	3,801	.....
Bills, accounts receivable	1,628,621	1,650,239	2,364,681	1,751,262	2,300,919
Inventories	3,502,102	3,518,547	2,798,907	3,449,800	1,144,475
Unadjusted debits	543,236	543,236	318,903	238,178	290,660
Note reserve	1,050,000	150,000	.....	.....	.....
Total	$63,438,878	$62,105,175	$55,915,165	$45,646,030	$35,729,413
LIABILITIES					
Capital stock	$23,083,990	$20,579,090	$20,579,090	$19,989,540	$18,339,030
Surplus	5,858,130	2,536,751	2,514,409	1,766,475	625,268
Deprec., deplet. reserves	23,555,236	22,206,705	18,858,241	13,173,735	9,934,284
Minority interests in subsidiaries	197,928	37,035	16,246	828,333	831,205
7½% mortgage bonds	2,195,000	2,525,000	2,846,000	3,182,000	3,500,000
Purchase money obligations	244,131	2,054,625	3,545,448	2,435,058	508,503
Obligations payable in oil	1,197,945	2,588,657	1,420,024	.....	.....
3 year notes	4,275,500	6,775,000	.....	.....	.....
Other obligations	.....	.....	77,000	50,160	287
Notes payable	826,713	1,165,987	4,104,153	2,000,389 *	1,709,369
Accounts payable	1,558,038	827,447	1,390,943	1,656,581	.....
Interest, federal taxes	429,220	563,239	283,635	154,191	22,551
Contingent reserve	.....	.....	.....	171,000	197,389
Unadjusted credits	17,046	245,638	280,975	238,568	61,528
Total	$63,438,878	$62,105,175	$55,915,165	$45,646,030	$35,729,413

*Includes notes and accounts payable.

Cleveland Stock Market

April 30

	Par	Bid	Asked	Last Sale
Canfield Oil Co	$100	.....	107	107
do pfd	100	.....	100	100
Fred G. Clark Co	10	3¼	4	3¼
National Refining Co. x.	25	38⅞	40	39⅛
do pfd	100	128	135	129¾
Paragon Refining Co	25	7	7¼	7
do pfd	100	....	....	67

x—Ex dividend.

Houston Oil Co.—Net before depreciation and depletion in first quarter amounted to $571,680 compared with $594,802 in first quarter of 1925.

Oil Dividends

	Amt.	Payable	Stock of Record
Gen. Asphalt pfd. q	$1.25	June 1	May 14
Independent O & G q	25c	July 19	June 28
Pure Oil q	37½c	June 1	May 10
do extra	12½c	June 1	May 10
Union Tank Car q	$1.25	June 1	May 10
do pfd. q	$1.75	June 1	May 10

Transactions In Oil Shares on New York Stock Exchange

1925 High	1925 Low	1926 High	1926 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended May 1 Sales	First	High	Low	Last	Ch'ge
.....	.....	26¼	24⅞	(sh)	713,000	N.P.	Amerada Corp	40cQ	Apr. 30, 26	16,900	25¾	26	25½	26	— ¼
79¾	48	74	63	(sh)	200,000	N.P.	American Republics	.....	.....	300	66¾	66¾	64½	64½	—3⅜
47¼	32	59½	44¾	$	56,000,000	$25	Associated Oil	50cQ	Apr. 26, 26	600	53	53	51½	52¾	— ¼
117½	95½	120¾	97		50,000,000	100	Atlantic Refining	.....	June 16, 24	55,900	109¾	*120¼	108¼	117⅝	+7⅛
117¾	113½	117½	115¼		20,000,000	100	do pfd	$1¾Q	May 1, 26	200	115¾	116	115¾	116	0
33½	18¾	33½	24⅜		18,428,350	25	Barnsdall Corp. A	50cQ	Apr. 2, 26	3,900	27½	27½	26⅝	27	— ½
30	16	29½	23¼		3,713,275	25	do B	50cQ	Apr. 2, 26	.....	.....	.....	.....	.....	.....
34⅜	23⅞	38⅛	30⅝	$	44,923,000	$25	California Petroleum	50cQ	Mar. 1, 26	18,700	33¾	34⅜	33	33½	— ⅝
70	42½	73	50		19,834,300	100	General Asphalt	.....	.....	35,200	67½	67⅝	64¼	64¾	—2½
109	86½	114¾	94⅞		7,416,000	100	do pfd	$1¼Q	Mar. 1, 26	1,000	105¼	106½	105	106½	+ ¼
59⅛	42	65⅜	49½		29,223,650	25	General Petroleum	75cQ	Mar. 15, 26	28,100	60	60⅜	59½	59¾	— ⅛
85	59	72	50¼		25,000,000	100	Houston Oil	.....	.....	3,700	59⅜	59⅝	58⅝	59½	0
41¾	13½	34	19⅝	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Apr. 12, 26	25,300	26⅛	26¾	25⅛	25½	— ⅜
14¼	5½	13¾	9	$	3,204,590	$10	Indian Refining	.....	Dec. 15, 20	2,800	10⅞	11⅜	10¾	11⅛	+ ⅛
12⅝	6	12½	8		4,545,860	10	do ctfs	.....	.....	1,300	9¾	10½	9½	9⅞	— ⅛
110	77	104	90¼		2,296,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
1½	¼	¾	¼		1,678,760	10	Kansas & Gulf	.....	.....	500	¼	¼	¼	¼	— ¼
23¾	13⅝	19⅝	12	(sh)	1,121,530	N.P.	Louisiana Oil	.....	.....	5,000	14¼	15½	14¼	14¾	+ ¾
35½	20⅜	28⅞	20¾	(sh)	330,000	N.P.	Maracaibo Oil	.....	.....	3,600	24	24⅜	23	23½	— ½
60½	32⅝	60¼	49¼	(sh)	1,894,518	N.P.	Marland Oil Co	$1Q	Mar. 31, 26	90,200	55⅛	57	54⅜	56⅜	+1
250	225	.....	.....	$	45,942,800	$100	Mexican Petroleum	$3Q	Apr. 20, 26	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....		12,000,000	100	do pfd	$2Q	Apr. 20, 26	.....	.....	.....	.....	.....	.....
22½	20	12⅛	6	(sh)	945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	1,500	8¾	8¾	8⅛	8⅝	— ¼
38	25¾	37	28	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 23	22,900	33	33	31½	32	—1
94¼	83	97	90	$	6,718,000	$100	do pfd	$13¾Q	Mar. 1, 26	200	95	95	94	94	— ½
3¼	⅝	2½	1¼		26,013,760	10	Middle States	.....	July 1, 23	3,200	1⅝	1¾	1½	1½	— ¼
1½	1½	1⅝	⅞		3,786,460	....	do ctfs	.....	.....	1,500	⅞	⅞	⅞	⅞	0
78½	51⅝	83¼	51¾	(sh)	3,500,000	N.P.	Pacific Oil	$1.50S.A.	Jan. 20, 26	12,400	56⅛	56⅝	55⅞	56⅝	+ ½
83⅞	59½	76½	56⅛	$	48,307,400	$50	Pan American P. & T	$1.50Q	Apr. 20, 26	2,700	66¼	66¼	64½	64¾	—1¼
84½	60⅛	78⅜	56⅞		90,484,800	50	do B	$1.50Q	Apr. 20, 26	36,900	67½	67¾	65⅜	66½	— ¼
49¾	37¼	46	34	(sh)	400,000	N.P.	Pan American Western B	50cQ	Apr. 30, 26	7,900	39¼	40¼	38½	39	— ⅞
6¼	2¼	14¾	4½	(sh)	198,770	N.P.	Panhandle P. & R	.....	.....	42,600	9¾	* 14¾	9¾	14⅛	+4
60½	37	85⅞	51	$	2,935,200	$100	do pfd	.....	July 2, 23	1,500	80¼	* 85⅞	70	84¾	+13¾
47⅛	36¼	48⅝	40	(sh)	2,045,381	N.P.	Phillips Petroleum	75cQ	Apr. 1, 26	82,600	45⅜	45⅜	44⅜	45¼	+ ⅜
3½	1¼	1⅞	1	$	29,622,925	$25	Pierce Oil Corp	.....	.....	2,200	1	1⅛	1	1⅛	+ ⅛
40	20¼	27⅛	19		15,000,000	100	do pfd	.....	Feb. 1, 22	500	20⅜	20⅛	†19	19	—1½
8¼	4½	7	4⅛	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	4,300	4¾	4¾	† 4⅛	4⅛	— ⅝
32⅝	12½	17½	11	$	11,467,850	$50	Producers & Refiners	.....	Sept. 15, 23	5,000	13¼	14	12	13¼	+ ¼
47⅝	27	35	31		2,845,350	50	do pfd	.....	May 1, 25	700	31	33	31	31½	0
33¾	25⅞	31	25⅜		75,959,250	25	Pure Oil Co	37½cQ	Mar. 1, 26	12,400	27⅝	28	27¼	27½	— ⅛
108½	103	111¼	106		13,000,000	100	do 8% pfd	$2Q	Apr. 1, 26	300	107¾	107¾	107	107	0
57⅜	48¼	57⅜	50	(sh)	773,883	13.40	Royal Dutch, N. Y. shares	$1.339	Jan. 29, 26	2,600	52⅛	52⅝	51⅞	52	— ⅛
49	39½	48⅝	42⅛	(sh)	93,599	£2	Shell Transport & T	96½c	Jan. 22, 26	300	42⅞	42⅞	42⅞	42⅞	+ ¾
28⅜	21⅝	28⅛	24	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 26	7,800	25⅝	25¾	25	25⅛	— ⅛
106½	99½	107	103	$	20,000,000	$100	do pfd	$1½Q	Feb. 15, 26	400	x104½	x105⅛	x104½	x105⅛	— ⅛
28½	17¾	28⅝	19⅞		7,207,620	10	Simms Petroleum	50cS.A.	Jan. 2, 26	24,300	22⅝	22⅝	20⅝	21¼	—1⅜
24⅞	17	24⅞	19⅜	(sh)	4,489,320	N.P.	Sinclair Consolidated	.....	May 31, 24	46,900	22	22⅜	21⅜	22⅛	— ¼
94⅛	78¾	95	90	$	17,852,200	$100	do pfd	$2Q	Feb. 15, 26	100	x 94⅞	x 94⅞	x 94⅞	x 94⅞	+ ⅜
32½	21¾	32⅞	26⅝		23,024,590	25	Skelly Oil Co	50cQ	Mar. 15, 26	195,400	33⅞	36⅛	32⅝	34⅞	+1⅜
67¼	51½	62¼	52½		237,610,350	25	S. O. California	50cQ	Mar. 15, 26	14,000	56¼	56⅜	55⅜	55⅞	— ⅜
47½	38⅜	46⅜	40¼		513,456,025	25	S. O. New Jersey	25cQ	Mar. 15, 26	99,400	44	45⅜	43⅝	44¾	+ ⅝
119	116¼	118½	116¼		199,972,900	100	do pfd	$13¾Q	Mar. 15, 26	2,900	117⅞	*118½	117⅞	118¼	+ ⅜
43⅞	38⅜	41⅝	30⅛	(sh)	1,103,776	N.P.	Sun Oil	25cQ	Mar. 15, 26	1,600	33½	33½	32½	33	— ½
6⅛	2	4¼	2¼	(sh)	1,121,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	2,300	2½	2⅞	2⅜	2¾	+ ⅛
55	42¾	54	48	$	164,450,000	$25	The Texas Co	75cQ	Mar. 31, 26	17,900	52	52⅝	50⅝	51¼	— ⅛
23⅜	10⅞	19½	12⅛		8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	12,000	14	15¼	14	14½	+ ¼
36⅞	30¼	39¼	30¼	(sh)	2,018,231	N.P.	Tide Water Oil Co	37½c	Mar. 31, 26	300	31½	32	31	31½	— ⅛
101	99	103	90	$	25,042,000	$100	do 5% pfd	$1.25Q	Feb. 15, 26	1,600	x 93⅞	x 94	x 93	x 93	0
5⅞	3½	4¾	3	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	11,400	3¾	3¾	3½	3¾	0
43⅜	33	49⅜	37¼	$	40,480,800	$25	Union Oil of California	50cQ	May 10, 26	10,900	44	44⅛	42⅞	43⅞	— ⅛
134	96¼	94	80		24,423,300	100	Union Tank Car Co	$1¼Q	Mar. 1, 26	1,000	90	90¾	90	90½	+ ⅝
117⅛	113¼	116½	113¾		12,000,000	100	do pfd	$1¾Q	Mar. 1, 26	200	115¾	115¾	115¾	115¾	+ ¼
31¾	25½	29¼	25⅛	(sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 26	6,700	25⅞	27⅝	25½	27¼	+1

*New High †New Low xEx-dividend Total Sales 992,500

Pittsburgh Stock Exchange

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended April 30 Sales	First	High	Low	Last	Ch'ge
.....	.....	6⅝	6⅝	N.P.	Andes Petroleum	1,000	6⅝	6⅝	6⅝	6⅝	0
8¼	5¼	7	5¾	$10	Arkansas Nat. Gas	4,350	5⅞	6⅛	5⅞	6⅛	+ ⅛
78¼	69¼	.....	.....	N.P.	Columbia Gas	.....	.....	.....	.....	.....	.....
18	14½	17	12½	$10	Devonian Oil	580	13¼	13½	†12½	12½	—1
112¾	105⅝	115	11¢	$100	Duquesne Lt. 7s pfd.	85	114	*115	113½	115	+1
95	90	.....	.....	100	Fayette County Gas	.....	.....	.....	.....	.....	.....
.....	.....	10	5½	....	HoustonGulfGas(w.i.)	2,315	6	6¼	6	6¼	+ ¼
55	32½	56½	49½	25	Lone Star Gas	1,950	32⅞	32⅞	32	32	— ⅛
.....	.....	33½	30	....	do new (w.i.)	.....	.....	.....	.....	.....	.....
7	3¾	6½	6	....	do Rights	.....	.....	.....	.....	.....	.....
37¾	31	36½	33⅛	25	Ohio Fuel Corp	2,964	34	34¼	33¾	34	0
34	26	34	28	25	Oklahoma Nat. Gas	485	29½	29¾	29	29	—1
8¾	5	5¾	4¼	5	Pittsburgh O. & G	300	4½	4¾	4½	4¾	+ ⅜
9¾	6	10	8	10	Salt Creek Cons	15	8	8	8	8	— ⅛
13¾	8½	10	8½	10	Tidal Osage	140	9	9	9	9	— ¼

Pittsburgh Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended April 30 Sales	First	High	Low	Last	Ch'ge
2½	.60	3¾	2⅛	$ 5	Colombia Synd	.....	.....	.....	.....	.....	.....
.60	.15	15	15	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
9	5½	.....	.....	10	Forest Oil	.....	.....	.....	.....	.....	.....
92¼	64	91½	85	25	Gulf Oil Corp	.....	.....	.....	.....	.....	.....
.....	.....	10	6½	....	Houston Gulf Gas	.....	.....	.....	.....	.....	.....
12½	3¼	1¢	7½	N.P	Leonard Oil & Dvlp	.....	.....	.....	.....	.....	.....
.....	.....	1⅝	1⅝	N.P.	Mountain & Gulf	.....	.....	.....	.....	.....	.....
2¾	1¾	.....	.....	1	Oklahoma Eastern	.....	.....	.....	.....	.....	.....
.47	.20	.20	.15	10	Omar O & G	.....	.....	.....	.....	.....	.....
.....	.....	2	1¼	....	Pittsburgh Oil Dev	.....	.....	.....	.....	.....	.....
27½	25	33	26	10	Plymouth Oil	420	29½	30	29¼	29¼	— ¼
7	3	5½	3	5	States Oil	.....	.....	.....	.....	.....	.....
4	1¾	3¼	2¼	$ 1	Texon Oil & Land	6,820	2¾	3	2¾	3	+ ¼
11	9	9¼	9¼	10	Tidal Osage	.....	.....	.....	.....	.....	.....
.....	.....	42¼	41	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....

*New High ‡New Low xEx Dividend

NEW YORK CURB BONDS

Week Ending Apr. 30

	High	Low	Last	Ch'ge
At. Gulf & W I 5s '59	71	70	71	+2
Cities Service 6s '44	92	91⅝	92	+ ⅛
Cities Service 6s new	92	91¾	92	+ ⅜
Cities Service 7s "C" '66	129⅝	129½	129½	— ½
Cities Service 7s "D" '66	103½	103	103½	+ ½
Cities Service 8s "E" '66	109	109	109	0
Galena S O 7s	102½	102	102	— ¼
General Pet. 6s	101⅝	101⅜	101⅝	+ ⅛
General Pet. 5s '40	99	98¼	98⅞	+ ⅝
Gulf Oil 5s '37	100¼	99¾	100¼	0
Gulf Oil 5½s '28	101	101	101	0
Independ Oil 6½s '31	99	97⅝	99	+1½
Pan Amer Pet. 6s '40	102	101	101⅝	+ ⅛
Pure Oil 6½s '33	103½	103	103	0
S O N Y 6½s '33	106¼	105¾	105⅞	— ⅛
Sun Oil 5½s '39	99¾	99½	99½	0
Tidal Osage 7s '34	104½	103⅝	104½	+1
Trans. Cont. Oil 7s '30	94½	94	94	0
United Oil Prod. 8s '31	30½	30¼	30¼	—3¼
Valvoline 7s	104¼	104	104¼	0

NEW YORK BONDS

Week Ending Apr. 30

	High	Low	Last	Ch'ge
Amer. Rep. Cor. Deb. 6s	100	99¾	99¾	— ¼
Associated Oil gold 6s	103	102¾	102¾	— ¼
Atlantic Refg. deb 5s	101	100⅝	100¾	— ⅛
Barnsdall Corp. 6s	100	99½	99¾	+ ⅜
Calif. Petrol sf 6½s	104	103¾	103¾	0
Empire Gas & Fuel 7½s	102¾	101½	101¾	— ¼
Empire Gas & Fuel 6½s	97¾	97½	97¾	+ ¼
Gen. Asphalt 6s	105½	105	105½	+ ¼
Humble Oil & Refg. 5½s	103	102⅝	102⅜	— ⅛
Mid-Cont. Pet. 6½s	104½	102¾	102⅞	— ⅛
Pan-Amer. P. & T. 7s	105⅝	105⅝	105⅝	+ ⅜
Pan-Amer. P. & T. 6s	107⅞	106½	107½	0
Pierce Oil deb. 8s	107	106½	106¾	+ ½
Producers & Refnrs. 8s	112¼	111	111	— ¼
Sinclair Con. Oil col. 7s	96½	95¾	96⅛	+ ⅛
Sinclair Con. Oil con. 6½s	91	90¼	91	+ ⅜
Sinclair Con. Oil 6s	108⅞	107½	108½	+ ⅜
Sinclair Crude Oil 6s	100⅞	100⅝	100¾	0
Sinclair Pipe Line sf 5s	90¾	90	90¾	+ ½
Skelly Oil 6½s	143½	131¼	141	+6½
Superior Oil 7s	96	96	96	0
Union Oil of Calif 6s-A	105⅜	104¾	105⅜	+ ⅜
Union Oil of Calif 5s C	97½	96⅜	97¼	+ ⅛

Standard Oil Stock Traded in New York Curb Market

1925 High	1925 Low	1926 High	1926 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended April 30 Sales	First	High	Low	Last	Ch'ge
26⅜	17¼	19¾	17	£ 4,000,000	£1	Anglo American	32.4cS.A.	Jan. 4, 26	3,000	17½	17⅞	17½	17¾	0
4¼	1⅜	2¼	1¾	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	1¾	1¾	† 1¾	1¾	— ⅛
12⅜	3	4½	3½	$ 10,000,000	$10	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
240	205	255	226	1,000,000	100	Borne Scrymser	‡84S.A.	Apr. 15, 26	10	235	235	235	235	0
72	53½	59½	53	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 26	250	53	53½	53	53	— ½
74	48½	73¾	65	3,000,000	25	Chesebrough Mfg	75cQ	Mar. 31, 26	200	67	67¾	67	67¾	+2¾
115	110	.....	.....	1,000,000	100	do pfd	$1¾Q	Mar. 31, 26	.....	.....	.....	.....	.....	.....
31½	21⅞	25⅞	19½	34,914,280	10	Continental Oil	25cQ	Mar.'15, 26	24,900	21½	21¾	20¾	21¾	+ ½
17½	10	16	13½	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	200	14⅜	14⅜	14¼	14¼	+ ¾
150	132	137	110	3,000,000	100	Cumberland Pipe Line	$3Q	Mar. 15, 26	200	115	119½	†110	111½	—8½
96	61	63¾	49	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 26	150	49	50	†49	49	—3
68½	23½	32½	19	16,000,000	100	Galena Signal Oil	.....	June 30, 25	125	21	21	21	21	— ¾
105	88	94½	78	4,000,000	100	do new pfd	$2Q	Mar. 31, 26	20	83	83	83	83	0
114	95	97½	80⅜	2,000,000	100	do old pfd	$2Q	Mar. 31. 26	100	80⅛	80⅛	80⅛	80⅛	—2⅜
95	42¼	99⅝	52	43,750,000	25	Humble Oil & Refining	30cQ	Apr. 1, 26	32,800	65½	68⅛	62	67¼	+ ¾
.....	.....	68⅛	53½	72,916,667	25	do new w. i	.....	.....	32,300	66¼	* 68⅛	62½	67½	+1
.....	.....	27½	17½	.....	....	do rights	.....	.....	.....	.....	.....	.....	.....	.....
154½	127	144½	134¼	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 31, 25	180	143	*144½	143	144½	+2¼
39¼	27¼	38¾	31½	(sh) 6,491,852	N.P.	Imperial of Canada (new)	25cQ	Mar. 1, 26	11,100	34¼	35⅝	33⅝	35	+ ⅝
84	57⅛	70	58	$ 5,000,000	50	Indiana Pipe Line	$1Q	Feb. 15, 26	50	65	65	65	65	+5
35⅜	22⅛	35¼	28¾	(sh) 7,118,138	N.P.	International Petroleum	25c	Feb. 15, 26	31,900	32⅜	33½	32	33⅛	—1¼
25⅜	16½	20⅜	16	$ 6,362,500	$12½	National Transit	25cS.A.	Dec. 15, 25	1,400	16½	16⅝	16	16	— ⅛
79	49¾	51⅜	39	5,000,000	100	New York Transit	$1Q	Apr. 15, 26	.....	.....	.....	.....	.....	.....
88	67½	80¼	70¾	4,000,000	100	Northern Pipe Line	$3S.A.	Jan. 1, 26	50	72⅛	72⅛	72⅛	72⅛	— ⅜
75¼	60¾	67⅜	59	60,000,000	25	Ohio Oil Co	50cQ	Mar. 31, 26	3,000	60⅞	62	60	61¾	+1¼
44½	19	23	15	10,000,000	25	Penn Mex Fuel	50c	May 21, 25	500	19½	19½	18⅜	18⅜	—1⅛
65½	45⅜	60¼	48	60,000,000	25	Prairie Oil & Gas	.....	July 31, 25	26,300	54½	56¾	53⅜	56⅜	+2
129¾	106	127½	122¼	81,000,000	100	Prairie Pipe Line	$2Q	Apr. 30, 26	400	124	124	123½	123¾	— ¼
254	200	212	191	4,000,000	100	Solar Refining Co	$5S.A.	Dec. 19, 25	40	200	202	199	202	+3
103	63	74½	61½	10,000,000	100	Southern Pipe Line Co	$1Q	Mar. 1, 26	50	66	66	66	66	0
197	139	197	152	20,000,000	100	South Penn Oil Co	$1.50Q	Mar. 31, 26	110	160	160	159½	160	+2
47½	45	50	38¾	20,000,000	25	do new	.....	.....	1,200	39½	40	39½	40	+ ¾
84	50	56	51⅜	3,500,000	100	South West Pa. Pipe Line	$1Q	Apr. 1, 26	50	51⅜	51⅜	† 51⅜	51⅜	—2⅜
.....	.....	58¾	51½	(sh) 12,602,434	N.P.	S. O. California (new)	.....	.....	12,100	55½	56	55¼	55½	— ⅜
70¾	59½	70½	61½	$ 223,756,258	$25	S. O. Indiana	62½cQ	Mar. 15, 26	23,700	63¾	65¼	63	64½	+ ⅜
46	30⅛	36½	25	8,000,000	25	S. O. Kansas	.....	June 16, 24	3,600	26¾	28	26¾	27	0
137	114¾	134⅜	108	16,864,434	25	S. O. Kentucky	$1Q	Mar. 1, 26	1,000	118	120	118	120	+3
270	231	267	206	3,000,000	100	S. O. Nebraska	$5S.A.	Dec. 19, 25	360	257	264	257	264	+6
48⅝	40¼	47¼	30⅜	227,535,300	25	S. O. New York	35cQ	Mar. 15, 26	112,400	31⅛	31⅜	31	31⅜	0
369	338	362	302½	14,000,000	100	S. O. Ohio	$2½Q	Apr. 1, 26	20	x315	x315	x315	x315	+1
123	116	119	117	7,000,000	100	do pfd	$1¾Q	Mar. 1, 26	30	118	119	118	119	+2
27	12	23	15½	1,722,931	25	Swan-Finch Co	.....	Nov. 1, 19	150	x 17½	x17½	x17	x17	—1
109⅛	80⅛	112	95¾	61,919,950	25	Vacuum Oil Co	50cQ	Mar. 20, 26	4,800	99½	100⅞	99	100¾	+ ¾

Borne Scrymser $2 extra April 15 $4 extra Oct. 15 $4 extra April 15 ‡Vacuum 50c extra Mar. 20, June 20, Sept. 19 Dec. 19 Dec. 19 special $1 Dec 19 S.O. Neb $10 extra Dec. 1 special $1 Dec. 19 S. O. Neb. $10 extra Dec. 19 Ohio Oil 50c extra Dec. 31. Chesebrough 62½c extra Dec. 29. Buckeye P. L. 59c extra Mar. 15. National Transit 50 extra Mar. 15.

STANDARD
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ISSUES

CARL H. PFORZHEIMER & CO

Specialists in Standard Oil and Miscellaneous oil securities

25 Broad St. New York

New York Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions week ended April 30 Sales	First	High	Low	Last	Ch'ge
11½	2½	14½	5	....	Amer. Maracaibo	1,140	6⅞	7⅛	6¼	6¾	— ⅞
8¾	5	6¾	5⅜	$10	Arkansas Nat. Gas	700	6	6⅜	6	6⅜	+ ⅜
.....	.....	19¾	14⅜	N.P.	Beacon Oil	1,900	15¾	15¾	15¼	15½	— ¾
47½	38	.....	.....	$25	British-American	.....	.....	.....	.....	.....	.....
10¾	2¾	22⅞	9¼	25c	Carib. Syndicate	34,000	14⅜	14½	11½	12⅝	—1⅜
43	35	42¼	37½	$20	Cities Service	14,000	40⅞	41¼	40¾	41¼	+ ⅜
85⅛	80¼	84½	82⅜	100	do pfd	6,000	83⅞	* 84½	83¾	84½	+ ⅝
8	7¼	7½	7¼	10	do pfd. B	400	7⅜	7⅜	7⅜	7⅜	0
21¾	17½	20⅝	19	10	do bankers' sh	.....	.....	.....	.....	.....	.....
2¾	.60	3½	2	N.P.	Colombia Syndicate	36,400	2 5/16	2 5/16	2 5/16	2 5/16	+ ⅛
15	8¼	15¼	10	N.P.	Creole Syndicate	5,300	11⅜	12	11	12	+ ¾
12¾	5	7⅜	1⅜	N.P.	Crown Central	1,300	2¼	2½	2¼	2½	+ ½
7	2	3¾	2	N.P.	Derby Oil & Ref	.....	.....	.....	.....	.....	.....
27	10½	14⅞	13	N.P.	do pfd	200	14¾	14¾	†13	13	0
6	1⅜	7	4	N.P.	Gibson Oil	11,400	4½	4½	4⅜	4¼	— ¼
3¾	1⅜	2	.65	N.P.	Gilliland v.t.c.	.....	.....	.....	.....	.....	.....
98¾	63½	98¾	82	$25	Gulf Oil Corp.	3,700	85⅞	86	85	85⅞	0
5⅞	2¼	4	2¼	N.P.	Kirby Petroleum	300	2½	2¾	2½	2¾	+ ¼
23¾	17⅞	25⅞	16½	N.P.	Lago Oil & Trans. A	58,800	18⅞	19½	18	19¼	+ ¼
11¾	4⅜	13	8½	N.P.	Lago Petroleum	1,500	9¾	9¾	9⅜	9½	0
13	6	12¼	5¾	N.P.	Leonard Oil & Dev.	15,600	8¼	9⅜	8¼	8¾	+ ⅛
25⅞	18	25¾	22	N.P.	Lion Oil Refining	2,000	23	23½	†22	22¾	+ ¼
4¼	1¾	2¾	2⅛	N.P.	Marland of Mexico	.....	.....	.....	.....	.....	.....
5¾	.56	5½	3⅜	$10	Mexican-Panuco	5,300	4⅝	4⅝	4¼	4¼	— ⅜
2	1	1¾	1⅜	1	Mountain & Gulf	1,100	1⅜	1⅜	1⅜	1⅜	0
26¼	18¾	26	23	10	Mountain Prod	18,600	25	25½	24⅞	25⅜	+ ⅜
6¾	3¾	6¾	5⅞	5	New Bradford	3,400	6¼	6¾	6⅜	6¼	+ ⅛
24¾	16¼	5½	2	10	New England Fuel	200	5¼	5¼	5¼	5¼	— ¼
19¾	6¼	17	9⅛	1	New Mex. & Ariz	2,100	12¼	12¼	10¼	10¼	—1¾
12½	8¼	17	8	25	New York Oil	100	11¼	11¼	11¼	11¼	0
37	14	36	34¼	25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
2½	.90	2¾	.70	N.P.	Peer Oil Corp	3,800	84	84	75	76	—1
28¾	16	29¾	18½	$10	Pennok Oil	1,100	20¾	21	20	20¼	— ½
44½	16	29⅝	14⅜	25	Red Bank Oil	4,300	26½	* 29⅜	26½	29⅜	+3½
33½	19	24⅞	14½	N.P.	Reiter-Foster	7,800	19¼	22	19	22	+2¾
9½	3½	7½	4⅝	N.P.	Ryan Consolidated	300	5¼	5⅜	5¼	5⅜	+ ⅜
9¾	6½	10	8	$10	Salt Creek Cons	1,700	8½	8½	8½	8½	0
35	24	36	28⅞	10	Salt Creek Prod	7,900	31	32	30½	32	+1
3⅞	1	2¾	1⅛	5	Savoy Oil	.....	.....	.....	.....	.....	.....
13¾	9	10	7⅝	10	Tidal Osage	.....	.....	.....	.....	.....	.....
10⅞	8	10	8½	10	do non-voting	.....	.....	.....	.....	.....	.....
.....	.....	27	21	N.P.	Tide Water Assoc.	7,900	24¾	24⅞	23⅝	24½	— ⅛
.....	.....	99¼	97½	100	" " " pfd.	2,200	97½	97½	97½	97½	0
4⅞	1¾	8	4½	5	Venezuelan Pet	29,700	6¾	6¾	6¼	6¼	— ⅜
.....	.....	29¾	23½	....	Warner-Quinlan w.i.	1,600	26¼	27½	26	27½	+1⅜
31¼	22¼	27¼	22	N.P.	Wilcox O. & G. new	700	25¾	25¾	25¼	25⅜	— ⅜
7	3⅞	6⅜	5¼	N.P.	Woodley Petroleum	200	5⅝	5⅝	5⅜	5⅜	— ⅛